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THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment and Administration of Hospitals, Sanatoriums and Allied Institutions, and to Their Medical, Surgical and Nursing Services

Vol. XXVIII *March 1927* No. 3

A DARK AGE IN HOSPITAL PLANNING?

By S. S. Goldwater, M.D., Director, Mount Sinai Hospital,
New York

IT IS easy to swim with the tide, to accept complacently institutions to which we are accustomed, to assume without searching investigation the superiority of our own times. To perceive and acknowledge the merits of distant countries and remote ages is a less facile accomplishment. "Better fifty years of Europe than a cycle of Cathay," sang Tennyson, appraising generously the achievements of the civilization that nurtured him.

If, turning to our own country and our own times, I assert that the last fifty years of hospital planning in America have resulted in so much progress all along the line as to outshine the results of a cycle of previous efforts, who will challenge the claim? But can such an assertion be reasonably made? Have we progressed in every direction? Are the current tendencies in hospital planning uniformly sound? Let us compare the old with the new, and try to judge impartially.

From a volume entitled "Hospital Plans," containing "Five essays relating to the construction organization, and management of hospitals," contributed by various authors for the use of Johns Hopkins Hospital fifty years ago, I venture to select, as typifying the collective aims of the scholarly contributors to that interesting volume, a ward plan presented by Dr. Joseph Jones—a plan carefully worked out in accordance with principles then generally accepted. Have we who plan hospital wards today improved on those principles? Instead of assuming quite arbitrarily that we belong to an abler and more enlightened generation, let us try to see ourselves as Dr. Jones and his contemporaries would see us.

Glancing from Dr. Jones' plan to the plans of a dozen hospitals that have appeared in recent literature, one observes many striking differences between the older and the newer technique, and most conspicuous among these differences, a disposition to develop inside rooms and spaces, to substitute dark rooms for rooms open to the sun and air. There seems, indeed, to exist today a tendency which, if it continues unchecked, is likely to win for the present period the inglorious title of "the dark age in hospital planning." Therefore I say that it is high time that hospital architects, who are more and more, in a manner of speaking, "digging in," should take account of the beneficent qualities of sunlight and fresh air, which were very much on Dr. Jones' mind when

Let There Be Light

DR. GOLDWATER here challenges the claim that American hospital planning in the last fifty years has been in every respect along the line of progress. He asks for a reconsideration of values and for increasing vigilance on the part of hospital architects, consultants and building committees in assuring that the sick shall always be accorded their just dues. "Is it not our duty," he asks, "to plan hospitals scientifically and humanely, holding fast to the fundamentals of sunshine and fresh air, for which there are no known substitutes?"

he planned his hospital ward in 1875 but which many recent hospital planners have apparently overlooked.

Not that I would be disposed at this time to intrust the planning of a hospital to Dr. Jones, or to any of the worthy men who participated in the famous Hopkins competition; for if in the bright blue eyes of his imaginary ward nurses Dr. Jones caught the glorious reflection of the stimulating sunlight which he so religiously guarded, if he offered to his nurses and his patients generous draughts of clean fresh air, he apparently forgot that nurses are not all eyes and lungs, that a nurse moves about on two feet, and that in the course of twelve hours of ward duty, laden with bed utensils, food trays or medicine glasses, she cannot travel more than a certain number of miles. But perhaps Dr. Jones' nurses knew no such limitation; perhaps they flew down the ward with the incredible speed of a Nurmi or a Joie Ray, ecstatically murmuring "be jubilant my feet," and never once panting for breath. If they did not, they could have accomplished but little nursing, for Dr. Jones' ward had not only majestic height and width, but a terrifying length; and all of the apparatus that is required in ward nursing, or at least such as was then considered necessary, was placed at its extreme ends.

Specifications of Ward

In Dr. Jones' published plan, the ward proper had a length of 150 feet, a width of 30 feet, and a height of 18 feet. Its capacity was forty beds, and it allowed 2,250 cubic feet of air space per patient. It had huge windows, twenty of them, each 5 feet wide and 17 feet high, extending from 6 inches from the floor to 6 inches from the ceiling. Pairs of windows were directly opposite each other, providing means for ample cross ventilation. The water-closets and bedpan sinks occupied a room 10x10 feet at one end of the ward; this was a cross-ventilated room with windows on three sides; the entrance to it was through a lobby in which there was a large window. Symmetrically balancing the sink room was a "bath and ablution room," likewise with three windows, and with a ventilated lobby of its own. At the opposite end of the ward were a nurses' room and a clinical record room, each 10x10 feet.

The ward was entered from a spacious corridor 15 feet wide. Directly across the corridor beyond the nurses' room and clinical room, was a "mess room and scullery," 15x15 feet, and a "press room for clothes," 5x15 feet, the clothes room with a single large window, the mess room with two. Along each side of the ward was a piazza or open gallery, 140 feet long and 10 feet wide. Nursing in Dr. Jones' ward was evidently anything but child's play; it was a task for willing, patient, strong-limbed women. To carry a bedpan between the sink room and the most distant bed and back again, was almost a day's march.

The Jones' ward was far from perfect in many other respects. Each patient in the ward was exposed to all of the annoyances arising from examinations and treatments, from the performance of the natural functions of the body, and from the feeding, grunting, groaning, and the occasional delirium of the occupants of the thirty-nine other beds. Even during the last sad hours of a moribund patient's ebbing life, privacy was not vouchsafed, except insofar as a portable screen would supply it. The temperature of the ward was necessarily controlled by the average need of all the patients, individual requirements being ignored, except as to the optional use of the open piazzas, or the greater proximity of one bed than another to an open window. To darken the ward for one patient, it must be darkened for all. All patients must be awakened at the same hour. If ward visiting was limited to certain hours, the visitors must be admitted in droves, creating a hubbub not precisely agreeable to the more sensitive patients.

In brief, the plan of Dr. Jones is weighted with all the disadvantages of a large open ward, where forty patients must needs accommodate themselves to precisely the same environment without regard to their varied individual needs. In many respects it is a defective and unfortunate plan; but it has its good points, too, for it is a plan conspicuously generous in its proportions, a plan that stresses the unquestionable value of light and air, one that aims at the disinfection and purification of the contained air through its dilution, and through the germicidal effect of sunlight.

Now, having pointed out both the merits and demerits of the ward plan of this eminent hospital essayist, let us consider some of the shortcomings that characterize hospital planning today.

Modern Ward Tendencies

Modern plans have many valuable features of which Dr. Jones did not even dream, for the science of hospital administration has progressed in many directions during the last fifty years, and its discoveries have not been altogether disregarded. Modern wards, however, tend more and more to depart from the brightness and the spaciousness that Dr. Jones and his contemporaries regarded as the indispensable foundation of all wholesome hospital planning. Let us glance in succession at certain crude features of typical plans of recent date, which in a discussion with

the sanitarians of fifty years ago it would be difficult to defend.

1. A ward of sixteen beds, 40 feet square and 10 feet high, allows 1,000 cubic feet of air space per bed. Only eight of its sixteen beds adjoin windows; the remaining eight beds occupy inside ward space. The ceiling is so low that the rays of the sun never fall across the interior beds. Mechanical ventilation is not provided. The freshening of the air of the ward after the use of bedpans by occupants of inside beds can be accomplished only by opening the windows. This presents grave difficulties in cold weather and even involves some danger to the occupants of the beds next to the window.

2. A hospital building, 200 feet long by 40 feet wide, its long axis north and south, has an interior corridor flanked by toilets, bathrooms, sink rooms, floor kitchen, nurses' station, examining room. It terminates at either end in a ten-bed ward, each of the terminal wards being 40 feet long, 20 feet wide, and 10 feet high, allowing 800 cubic feet per bed. Only one of the two large wards faces south. The corridor is completely enclosed and is provided with no means of direct or natural ventilation; neither ward nor corridor is ventilated mechanically.

The Private Room Corridor

3. A private room corridor, 180 feet long and 7 feet wide, is lined by patients' rooms and miscellaneous service rooms. At its extremities open verandahs were originally built; these have now been enclosed; the one at the north end has been converted into a five-bed ward, the one at the south end into a stuffy "sun room." The enclosure of the verandahs has deprived the interior corridor of its only possible means of ventilation. The original semi-effectual cross ventilation of the patients' rooms (outer air to ventilated corridor) is no longer possible.

4. A "single room" hospital has fifty rooms on one floor, occupying four wings radiating from a common centre. The orientation of the wings is such that more than 50 per cent of the rooms never get direct sunlight. The corridors are completely shut in.

5. In a hospital intended exclusively for private patients, every patient's room is connected either with a private toilet or with a combined toilet and bath. The toilets and baths are all windowless inside rooms, dependent on ventilating machinery which is not regularly operated.

6. A large multi-storied out-patient department has on each floor a long central corridor, used as a waiting room, with a window at one end. To each clinical department there is assigned for purposes of examination and treatment a series of connecting rooms on one side of the central corridor; between these rooms and the central corridor is an interior corridor which affords private communication between the rooms of a given clinical department. The interior corridor is without sunlight or natural ventilation; mechanical ventilation is absent.

7. A children's ward, planned for fourteen cribs, has been subdivided into small exterior and interior cubicles, and now shelters twenty-two children, for each of whom there is available less than 500 cubic feet of air space.

8. Heedless of the urgent warnings of competent spokesmen for radiology, an x-ray department in an important hospital is located in a pipe-infested basement three-quarters underground, with a ceiling height of scarcely 9 feet.

Illustration by courtesy of York and Sawyer, New York.

Architect's drawing of the new Allegheny General Hospital, Pittsburgh, Pa.

9. A 400-bed city hospital, which is progressive enough to maintain a special department for teaching the art of healthy living, offering periodic health examinations to those who are disposed to pay for them, has placed its wretchedly ventilated laundry in the cellar, partly, indeed, in a vault under the adjoining sidewalk. What a discrepancy between theory and practice!

10. The nurses' station at the centre of a private hospital floor occupies an alcove which opens off an interior unventilated corridor.

11. A series of anesthesia and recovery rooms in an otherwise sumptuous hospital occupy unventilated interior spaces, and depend for light and ventilation on skylights that are never opened.

12. Adjoining a 20-bed hospital ward is a small inside closet, unventilated, where bedpans are emptied into open sinks.

13. A compact twelve-story hospital building, facing north on a street less than 40 feet wide, is as gloomy inside as the fourth circle of Dante's Inferno.

14. A teaching hospital publishes plans for buildings which are to be built around enclosed courts of modest dimensions; patients' rooms will open on these courts.

15. Pupil nurses are assembled in a basement classroom lighted by area windows. The area is 5 feet wide, and the adjoining ground is on a level with the tops of the windows.

Dangerous Trends in Construction

Is it not evident from these typical examples of modern hospital practice, encountered by a single observer within the space of a year, that to a large extent hospital planning in America is traveling along a dangerous road? Is it not being impelled by forces that are inimical to the production of such healthy hospitals as were the constant aim, and often the actual achievement, of Dr. Jones and his contemporaries?

The cost of construction is, of course, a potent factor. In many localities this is so high that architects are tempted, in the planning of hospitals, to follow purely commercial standards, disregarding the difference between the needs of a hospital on the one hand, and those of a hotel, apartment house or office building on the other. Building committees are asked to consider economy to the exclusion of everything else that matters. It is a fortunate thing that not everybody is thus misguided. At a meeting of the lay managers of a Catholic hospital, a member protested that the program of the committee seemed unduly reckless, inasmuch as the committee, which took pride in its work, was proposing to spend a larger sum of money than was actually in hand. Said the objecting member, "I am sure that no member of this committee would follow a similar course in his private business." "Sit down, Mr. So-and-so," said the chairman, "you are out of order; this is not private business, it is Catholic charity."

Political economy teaches that in any competition between two forms of currency which are of unequal value, the cheaper currency displaces the dearer. Shall cheap, dark, unhealthy, counterfeit hospital currency be permitted to drive out the safe and restorative currency to which the sick are entitled? Do we of the present generation wish to go down in history as the artificers of a dark age in hospital planning? Shall we, in deference to alleged business principles and heedless of unpleasant, even tragic consequences, crowd the largest possible number of sick people into the smallest possible space? Or is it not rather our duty to plan hospitals scientifically and humanely, holding fast to the fundamentals of sunshine and fresh air, for which there are no known substitutes?

What I have written is not merely an indictment, it is also a confession. I cast no censorious stones, for my own record in this particular is not without blemish. But hereafter, whenever I find myself tempted to forget the just dues of the sick, I propose to summon to my support the spirit of that sage and stalwart chairman who said to his timorous colleague, "Sit down, you are out of order; this is not a business enterprise, it is Catholic charity." A beautiful sentiment, warmly expressed, uncopyrighted, and adaptable to the use, in a threatening emergency, of any group, sectarian or non-sectarian, that wishes to do its share toward the cultivation of worthy hospital planning!

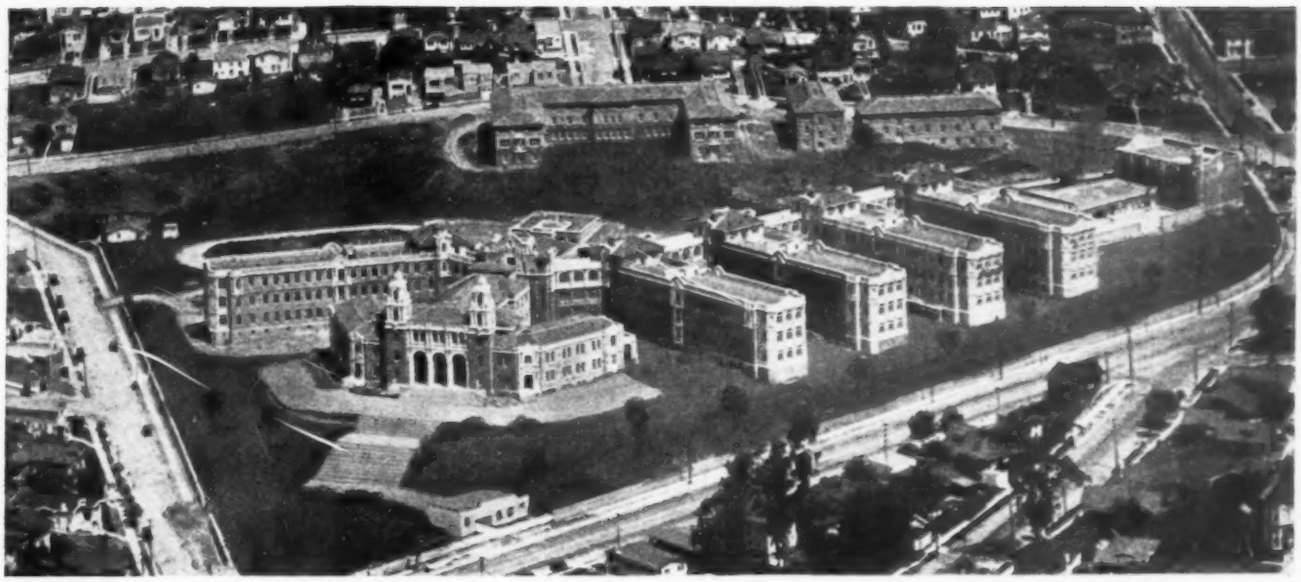
Will there be a dark age in hospital planning? Not if hospital trustees are wise, not if hospital architects are skillful, not if hospital consultants are obedient to the commands of conscience and of common sense.

SOME PROBLEMS CONFRONTING THE MUNICIPAL HOSPITAL

Administrators of municipal hospitals must face the problem of determining what measures can be adopted to bring the medical care of their patients up to the level of the standards of the day. One of the chief advantages which privately endowed hospitals have enjoyed in the past is their better financial support. This is, of course, of fundamental importance and lack of money has probably been the predominating factor in determining the character of public hospitals.

Unless money is furnished freely to meet the demands of expansion and to provide for new developments in the municipal hospitals it will be impossible for the large municipal institutions to keep pace with medical progress. But money, alone, even in sufficient amount, will not solve the problem of how the municipal hospital is to fulfill its function of providing the best medical care for any and all of its citizens. This function entails a number of problems of organization, of administrative duties and of coordination of the educational and curative phases.

Most municipal hospitals need a larger staff, so that the burden of any one man is lighter. The number of patients per intern is often so enormous that the physicians cannot give the individual attention that patients should receive. More interns, more experienced members of the resident staff and more and better clinical and laboratory facilities are needed. There is also a scarcity of nurses so that the nurses are overworked and in many instances do not have adequate and pleasant living quarters as well as training school facilities.—Francis W. Peabody, M.D., Report No. 2196, N. Y. State Bureau of Municipal Information.



Illustrations by courtesy of Henry H. Meyers, Oakland, Calif.

Airplane view of the new Highland Hospital, Oakland, Calif.

CALIFORNIA'S LATEST CONTRIBUTION TO MODERN HOSPITALIZATION

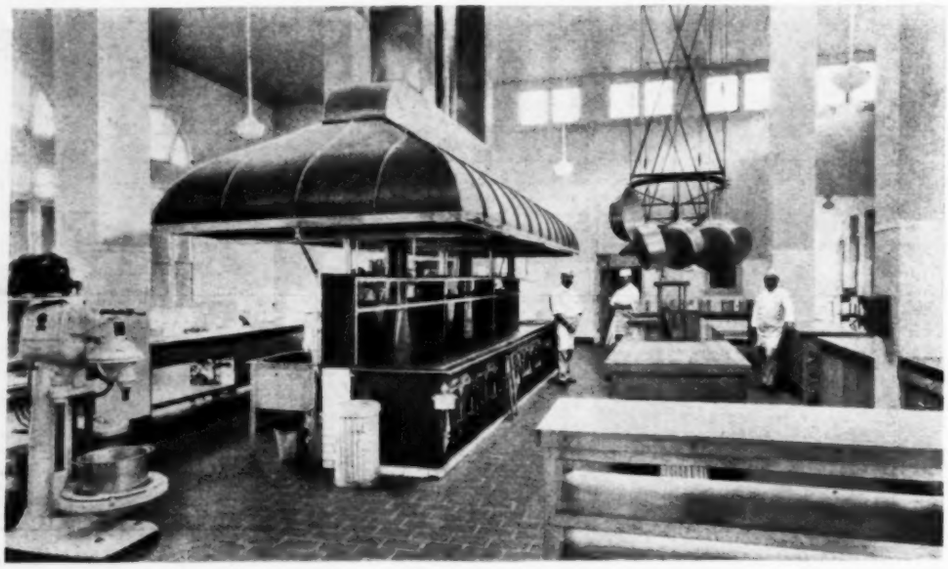
By R. G. Brodrick, M.D., Director of Hospitals, Alameda County, Calif., and Clarence Ebey,
Oakland, Calif.

WITH the completion of the Highland Hospital, the new Alameda County hospital, Oakland, Calif., has come the realization of modern and adequate hospital facilities for this county which serves a large territory in the western part of the state. Until now the county has had only the old Alameda County Hospital at San Leandro, which has lately been remodeled and modernized, and will now house the chronic cases of the county. The new hospital is the result of many years of constructive effort on the part of the Institutions Commission, which was made possible by the public spirited actions and splendid cooperation of the Board of Supervisors of Alameda County.

The new hospital is ideally located on the hills overlooking Oakland and San Francisco Bay in the heart of the city's residential district and less than two miles from the business district. Every advantage of the site has been taken by Henry H. Meyers, architect, Oakland, who has designed a group of buildings that provide admirably the type of facilities needed and blend artistically with the natural beauty of the setting. The buildings are of the Spanish Colonial architecture. The topography of the site was a large factor in controlling the general scheme of development, since the location is on a bluff at the apex of a triangle formed by three intersecting streets no two of which happen to be on exactly the same level.

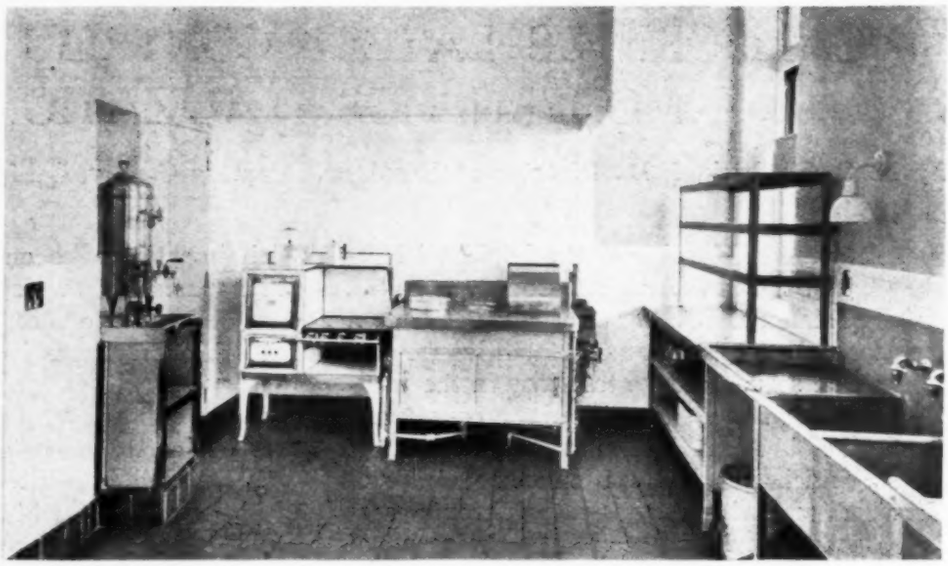
The spacious grounds, which were in the process of designing for nearly two years before work on the buildings was begun, under the direction of Howard Gilkey, landscape architect, are arranged to enhance the type of architecture and to carry out certain color schemes. More than half of the ground is planted with palms, cedar and olive trees, which will be appropriately placed, in addition to thousands of small shrubs that have been grown at the San Leandro hospital during the past four years.

The grounds are arranged in many separate units or courts each having a definite color scheme and treatment. The front approach is Mediterranean in appearance, with palms and cedars and a predominant note of orange color provided by masses of flowering shrubs. Between the towering ward buildings are long, narrow canyon-like courts which present a beautiful color spectacle obtained by the blending of thirty varieties of varicolored flowers. Each of the courts presents a different treatment and the grounds surroundings the various buildings all have an appropriate landscaping. The grounds surrounding the power house are lined with native trees while the front lawn of the nurses' home is decorated with varieties of ferns and native plants. In the rear the patio is enhanced by a central fountain, which



A view of the main kitchen located on the top floor of the hospital. It is well lighted by skylight windows and three large arched windows on the north wall.

A view of a ward serving pantry. The under surface of the hood above the stove is tiled and all valves on the steam tables are exposed and within easy reach. The splash back of sinks and drain boards are built into the wall.



A view of one of the dining rooms. The table tops are birchwood, walnut stained and varnished.

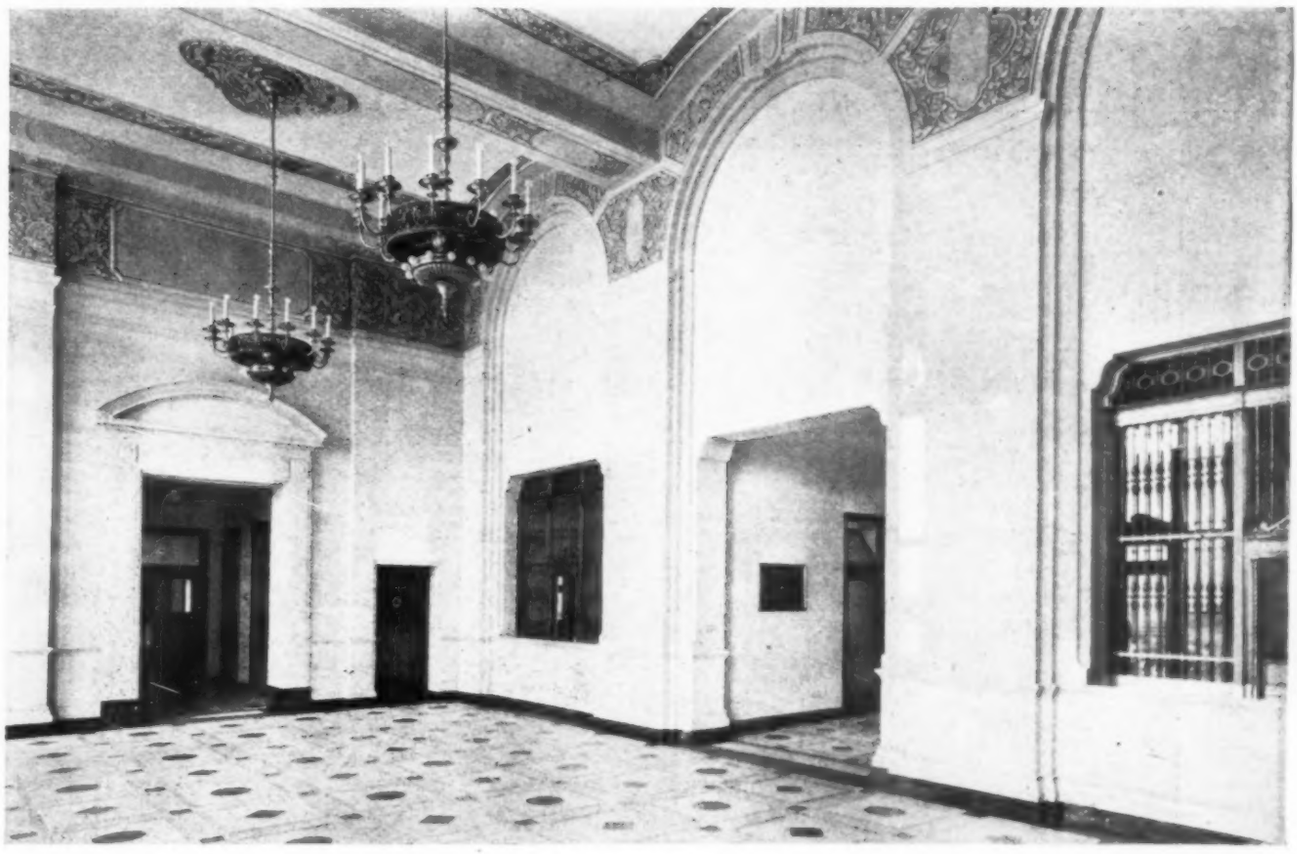
takes on a pink hue produced partly by the tall dahlia adjacent. Below is the formal rose garden and encircling the residential halls will be planted many varieties of native trees and shrubbery.

The hospital includes fourteen buildings arranged on a central axis with the administration and service buildings in the center. Around these are grouped the five ward buildings, pathological building, garage, power house, nurses' home, the buildings to house the employees of both sexes and a gate lodge, which provides keeper's quarters and a room for visitors' children. The buildings are all of concrete with terra cotta finish.

pathological building and power house. Thus access can be had from each building to any other on the same floor.

A long terraced general approach leads to the administrative building, the most imposing of the buildings, located at the front and center of the group, with the service building immediately at the rear. The rear of the service building is two stories below the service roadway, which approaches from one of the corners of the triangle.

The entrance to the administration building is imposing, with its towering, circular open space extending up two stories. The spacious lobby



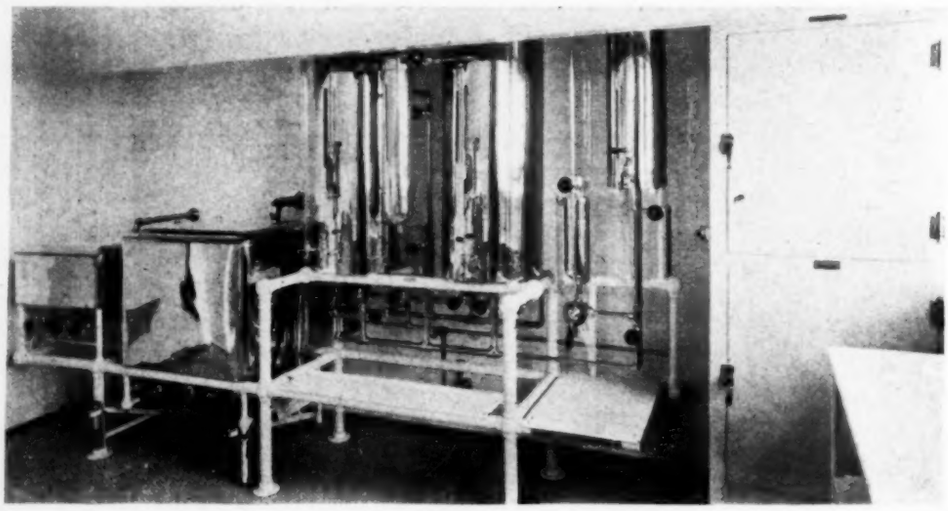
A view of the spacious lobby of the administration building showing the grilled openings corresponding with the main office and telephone exchange

At present the hospital contains 400 beds and when plans for expansion are realized it will ultimately house 1,000 or more beds. Through wide spacing of the buildings and careful orientation, a maximum quantity of natural light has been provided everywhere, particularly in the corridors. An effort has also been made to make the hospital as attractive and comfortable as possible and to that end white walls and furniture have been avoided and warm shades and tints have been used with pleasing results.

Particular attention has been paid to circulation and communication between buildings. A wide corridor on each floor extends through the administration and service buildings reaching the

devoid of all hospital atmosphere, resembles that of a large metropolitan bank, and has marble floor and walls, with an ornamental plaster ceiling. On the right of the main entrance is the telephone exchange, and the information and accounting offices are on the left. To the rear on both sides of the wide corridor are the staff offices, the admitting rooms and the office of the social service worker. In addition to the executive and staff offices, the building contains seven operating rooms, the x-ray laboratory and interns' quarters.

The five ward buildings are so placed as to permit of additional ones, as demands require, extending on each side of the service building. These buildings contain three stories and base-



A battery of sterilizers in the surgical department. The back and side walls are tiled, and a condensation gutter is provided.

Above, a view of the radiographic room; right, a view of the biochemistry laboratory in the pathological building.

ment, with recreation room and glassed-in sun decks on the roof. Rooms are of various sizes, containing one, two, four and six beds. Thoroughly equipped diet kitchen and dining room, treatment and utility rooms, interns' quarters and attractively furnished solariums are also contained in these buildings.

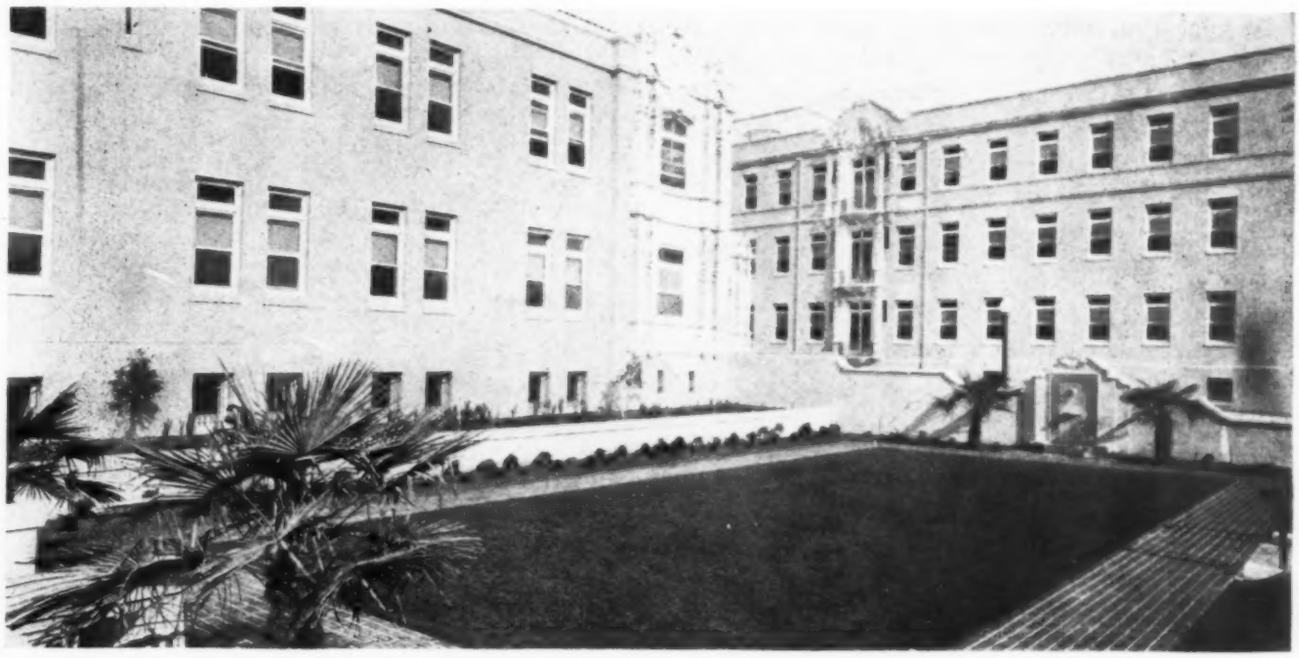
The nurses' control stations are located in the center of the wards, with linen supplies, telephone, signal boxes, patients' dining room and lavatories immediately surrounding, so that facilities are conveniently located.

The service building, immediately back of the administration building, contains general storage apartments on two floors, an ice refrigeration plant capable of producing two tons of ice daily, a half dozen refrigerators for meat and vegetables and many smaller ones, an ice cream plant, butcher shop and bakery. The building also houses the kitchens, three dining rooms, including one for the staff, nurses and employees, all operated in cafeteria style, and a recreation room on the fourth floor.

Special method of construction have been necessary in some instances because of the topography. This is particularly true in the rear of the service building where the footings extend thirty feet below the surface of the adjoining service roadway. At the subway entrance for pedestrians the rear wall of the gate house partly supports the main approach roadway, requiring a combination of retaining walls and skew arches. In several places where the ward buildings extended beyond the crown of the hill the footings were placed twenty feet below the level of the basement floor, in order to obtain suitable foundation.

Between the last ward building and the power house is located the pathological building, a two-story structure containing in the upper story laboratories for bacteriology, serology, biochemistry and pathology and a special office for the director. On the ground floor are located the morgue, mortuary, animal room, a museum for pathological specimens and surgeons' lockers and wash rooms.

Adjoining the pathological building is the garage, the top story of which has been arranged to house a laundry, when future needs require this service. At present the laundry work is done at the Alameda County Hospital, San Leandro, which has a most completely equipped modern laundry.



A view of one of the courts

Throughout the buildings an effort has been made to combine service with efficiency. The floor coverings are of a durable linoleum with an attractive reddish brown tint that harmonizes with the furniture and is easily cleaned. Stairs are covered with a compressed cork. The cost of maintaining the drug supply for the hospital has been reduced through a limitation of the number of prescription formulas for specified diseases. The drying rooms and compartments for towels, mops and other articles utilize the heat that is returned after heating the buildings. The furred-in space adjoining the columns is used for built-in cabinets for the storage of linen and other articles. These are but a few of the economies.

The indirect system of lighting is used throughout the institution and lights are built in room corners so that none may be near the high tension

wires in the x-ray rooms to cause short circuits. By means of the electric paging system, physicians', nurses' and employees' numbers are flashed three at a time, if desired. The visiting staff physicians register with a time clock upon arrival and departure. Several automatic electric elevators operated by push buttons have been installed in each building. The radiators are in many locations controlled by automatic thermostatic devices with wall thermometers.

In keeping with the decoration of the whole institution, the walls of the operating and emergency treatment rooms are finished in a gray green tone that is restful to the surgeon's eyes, and shadowless lights are installed over the operating tables.

Special equipment has been provided in the children's, maternity, psychopathic and isolation wards. In addition to the delivery room, preparation room, conveniently located sterilization facilities, and washroom, the maternity department contains a reclining room for the physician on duty.

Throughout, mechanical devices are employed in the handling and serving of food, and each ward has a steam table in which the food for patients is placed upon being delivered from the main or diet kitchens.

In keeping with the hospital, the nurses' home, called Nightingale Hall, is adequately equipped with teaching and recreational facilities and the living rooms are made homelike by the use of harmonizing color schemes for the walls and furnishings.

FUTURE HOLDS MANY USES FOR MEDICAL FILMS

The importance of the film picture in the advancement of science, particularly medical sciences, was discussed by Dr. Joseph F. Montague, Bellevue Hospital, New York, in a recent issue of the *Annals* of the American Academy of Political Science.

Dr. Montague points out that the interesting intestinal cases that have gone through Bellevue Hospital during the past nine years have been preserved by films and may be reviewed in an hour's time. This collection of films, he feels, is invaluable to the hospital as a record, since most of the patients portrayed have almost all passed from view, by reason of cure, removal or demise. In the future he believes that a library of films will be as important as a library of books.

The value of the film in teaching anatomy and other medical science is appreciated when one considers that the dissection of the entire human body, a process that takes months, can be shown in detail in a little over a half hour.

That the motion picture will in the future be used increasingly in teaching medicine and in health education was brought out at the recent meeting of the American College of Surgeons at Montreal, Que.

WHERE CITY IS NOT LIABLE

The Court of Appeals of Kentucky, in affirming a judgment dismissing the plaintiff's action for damages, says that the plaintiff, while employed as a servant at the Louisville City Hospital, an eleemosynary institution established and maintained by the defendant city, sustained numerous injuries to her face, head and other parts of her body, whereby she was disfigured and maimed for life, by the explosion of the boiler or drum of a steam sterilizer located in and used by the hospital.

The plaintiff claimed that the explosion resulted from the opening by her of the door to the boiler or drum of the sterilizer at the command of a nurse superior to her in authority, whom she was then attending as a helper and was required to obey. Her alleged right of recovery against the defendant city was rested on the ground that the explosion and injuries therefrom to her were caused by the gross negligence of the defendant's agents and employees, her superiors in authority, intrusted with the control of the hospital and the care of its inmates, in permitting the boiler or drum of the sterilizer to become and remain overcharged with steam beyond its capacity and power to withstand the pressure thereof, and also in failing to relieve or lessen such pressure by shutting off the steam from the drum in time to prevent the explosion.

In sustaining the general demurrer which the defendant filed to the plaintiff's petition, and in dismissing her action, the circuit court followed the numerous decisions rendered by the court of appeals, all to the effect that a municipal corporation is not liable in actions for negligence in the performance of public duties incident to the exercise of its governmental functions, and that persons employed in the performance of such duties by the municipal corporation act as public officers, charged with a public service, and, being mere instruments by which such public duties are performed, the doctrine of *respondeat superior* (let the master answer) does not apply to such employments, and, as declared in many of the cases decided in this jurisdiction, to hold otherwise and subject the municipality to responsibility for the negligence of such employees would indirectly impose on it a liability from which it is by law, or consideration of public policy, exempt.

The defendant city, by authority of the state constitution and provisions of its municipal charter, is clothed with power to erect, establish and maintain hospitals, almshouses and other buildings for the preservation of the public health, and when for that purpose it has established a hospital, it is not responsible to persons injured by reason of the misconduct or negligence of its agents and employees therein, and this would be true whether the person injured was a patient of the hospital or an employee therein.—*Journal of the American Medical Association.*

HARRISBURG HOSPITAL REORGANIZES ADMINISTRATIVE STAFF

The staff of the Harrisburg Hospital, Harrisburg, Pa., has recently been reorganized under a new administrative plan whereby the responsibility for the work is to be divided among three men, one representing and administering the surgical division, another the medical division and a third representing the board of managers of the hospital.

The plan includes retirement from the staff at the age of sixty-five years, those retiring becoming consultants and acting in an advisory capacity.

WHAT ARE THE SPECIAL NEEDS OF THE MODERN MATERNITY?

By Joseph B. De Lee, A.M., M.D., F.A.C.S., Professor of Obstetrics, Northwestern University Medical School,
Chicago

TWO fundamental principles underlie the planning and construction of a modern hospital for the care of women during childbirth. First, the maternity must be a separate, detached building, a hospital complete in itself; second, everything in it and about it must be the equal if not the superior of everything in and about the surgical hospital.

In the 1926 edition of THE MODERN HOSPITAL YEAR BOOK, in an article on maternity wards in general hospitals, I demonstrated in a manner that should convince the most skeptical that it is dangerous both to mothers and babies to make the maternity ward an integral part of a general hospital. The arguments there presented, together with the citations of epidemics of puerperal infections, would certainly convince any jury of husbands or life insurance adjusters. I claim that the surgical and medical patients are a distinct menace to the obstetric patient, and that therefore part of the present mortality and a relatively larger part of the present morbidity, both maternal and fetal, are due to the practice of treating such cases in close proximity.

The dangers come from contagion. The infection is transported from the surgical and medical cases to the lying-in woman and the neonatus, first, by carriers—the nurses, the interns, the attending men, the scrubwomen and others; second, by the air, in swirling air currents laden with dust or dried pulverized pus; third, through the laundry, through defective sterilizers, both instrumental and human.

As a result of our inability to counteract these agencies our old enemy, epidemic puerperal fever, is reappearing in our hospitals, and reports of this are coming in from east and west, north and south. It appears to be conclusively demonstrated that it is not possible, even with rubber gloves, high pressure sterilizers, individualization of cases, good aseptic technique, that is, so-called administrative isolation, to shut infection out of the maternity ward.

The first principle, therefore, to be carried out in planning a maternity is to provide an entirely detached building for it, complete with its own kitchen, laundry, servants' and nurses' quarters. This means that we must have architectural isolation, but, in addition to this complete separation of the clean from the infected patients, we must also insist on individualization and administrative isolation of both the clean and the infected patients. Perfect safety is attainable by neither the one nor the other, but we do at least approach it by having both, and if we do our best to have both forms of protection we will be doing all that is humanly possible for the charges committed to our care. This means that the maternity, besides being removed from the dangers emanating from the medical and surgical wards, must be provided with a place to isolate women and babies who develop infection in its wards, as well as those cases of puerperal infection that are brought in from the outside.

The board of trustees, accordingly, having decided to build a lying-in hospital, must realize that two hospitals are needed, one for clean maternity patients and one for infected cases.

Discussion Invited

IT IS the contention of Dr. De Lee that the maternity hospital should be built to fit the highly specialized obstetric technique of the present day and that the general laws of hospital planning apply only in part to the modern maternity.

The argument here is for complete architectural isolation of maternity cases so that the parturient may enjoy the protection of natural laws and not be exposed to dangers of cross infection from the surgical and medical cases in the same building. This necessitates an entirely detached building for the maternity.

Dr. De Lee's conclusions are at variance with current practice in many respects and because of the great importance of this subject and the rapidly increasing use of the hospital for maternity cases, the editors of THE MODERN HOSPITAL invite a full discussion from the field.

The second grand principle in maternity construction is that everything connected with this branch of service must equal and in some respects surpass what is provided for the surgical service. This is but carrying out the ideal that obstetrics is of equal dignity with surgery and that the obstetrician should never be content with less, in any way, than the surgeon enjoys.

Far-reaching indeed is this requirement and it is one that most boards of trustees of hospitals cannot see. They are still obsessed with the ancient prejudice that childbearing is a normal function, that any old woman is competent to superintend it, and that any kind of makeshift preparation is good enough for such a performance. But here and there an intelligent board of laymen, or a forward looking medical staff has provided proper quarters and service for the lying-in woman and shown the particular community the benefits that accrue therefrom. Furthermore, the statistics of a dreadfully high maternal mortality published by the proponents of the Shepard-Towner Bill are making many others note what is forming in the minds of the people. It is therefore to be expected that soon there will be a public clamor for safe maternity hospitals all over the country.

In undertaking to erect a lying-in hospital the board of trustees must realize at the outset that a maternity is more expensive to build and to maintain than a surgical unit, it being understood, of course, that both are of the same quality. The following are some of the reasons: A surgical operating unit closes down almost entirely at night, an obstetric unit is on twenty-four-hour service and requires three shifts of supervisors and interns; a surgical operation lasts from five to 120 minutes, rarely three or four hours, an obstetric case lasts from a few hours to several days; an operation is completed in one sitting, there may be two to six sittings on an obstetric case; the surgical patient is sewed up and sent to bed with an occlusive dressing which is not disturbed for a week or two, and the patient usually goes home with the second dressing applied; the obstetric patient goes to her room with a non-occlusive pad (costing as much as an occlusive dressing) and this is renewed every four to six hours for one or two weeks; (in the Chicago Lying-in Hospital, Chicago, 400,000 pads were consumed last year.) Two surgical operating rooms can take care of the operations of a large hospital; the maternity needs numerous operating (delivery) rooms, labor or first stage rooms, ward service in the operating suite, and more rest rooms and scrub rooms for the attending staff; the maternity operating room floor must be built to accommodate frequent peak loads, as obstetric

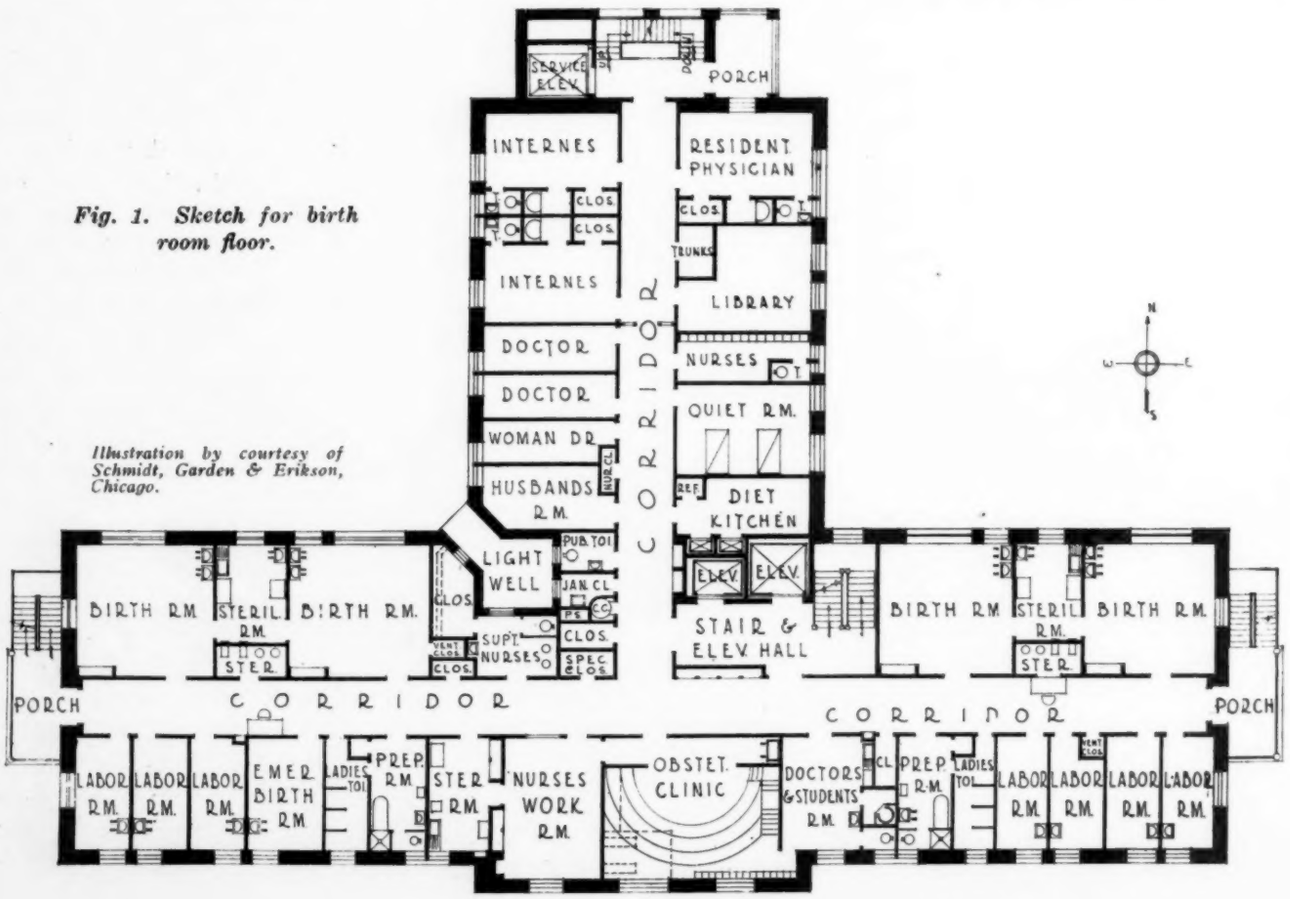


Fig. 1. Sketch for birth room floor.

Illustration by courtesy of Schmidt, Garden & Erikson, Chicago.

work is notoriously irregular; the maternity, while necessitating the same ward service, sterilizing rooms and duty rooms, on the bed patients' floors, requires, in addition, two kinds of nurseries for the babies, with all their numerous appurtenances. The nursing service of the maternity is easily 75 per cent greater than that needed in the surgical wards, the food consumption is more than 30 per cent greater, and the laundry work is fully twice as large.

The prevention and combating of infections is more extensive and expensive in the maternity. In the case of the mothers we have open wounds to deal with, wounds that are exposed to contamination for ten days or more, and the babies we might compare to sterile culture media ready to accept and nourish any infective organisms that may be floating around or that may be carried to them by carelessness, ignorance or inadvertence.

The obstetric case is everything that a surgical case is and more. Accordingly in designing the maternity the following elements must be considered:

A. Location.
B. Size.
C. Shape.
D. Apportionment of space to the various services.
E. Arrangement of the different services to secure harmonious and economical operation.
F. Architectural isolation, the septic pavilion.
G. Designing the special services, birth rooms and nurseries.
H. Question of noise.

Experience of Thirty-five Years

I do not intend to write a book on hospital construction nor do I profess to be able to solve many of the problems of hospital building and management that confront the hospital superintendent. Indeed, I regret that I have to add to his already large burden of troubles. But I have decided opinions on what a maternity should be and I am glad of this opportunity to present them to the profession. They are based on thirty-five years' practice in many hospitals, where I have actually lived a large part of my life, and on the experience gained in construction of two maternities.

A. *Location.* In selecting a site for a maternity one must consider salubriousness and accessibility. It is unfortunate if the structure has to be built up to the sky because of high ground values or for any other reason.

The location of the lying-in department of a general hospital should likewise be the most desirable from the point of view of human habitation, that is, the maternity should be placed where it will get plenty of quiet, sunlight, fresh air and retirement. The maternity should not be placed near the general laundry, the general kitchen, the boiler and engine rooms or the morgue. It must be completely detached from the rest of the hospital, the only connections being the steam and water pipes, electric light conduits and telephone wires. This condemns tunnels, cloisters and closed bridges.

Approach Through the Open Air

Although it is something of a hardship on the doctors, nurses and servants, everyone going to the maternity must go through the open air. It is one of the best safeguards against transporting infection.

B. *Size.* This will of course depend, not upon the bed capacity of the main hospital, but upon the demand for maternity facilities in the community served by the institution. The tendency of the times is for women to go to hospitals for delivery and this trend will grow. It is therefore wise to plan a building that is too large rather than one that is just right for the time, and further to remember that peak loads are common in obstetric practice. Nothing is so uncertain as to time as labor. It is most unwise to skimp the maternity, anticipating that in times of peak loads the overflow will go into the main building. This is inviting disaster. It is better to be content with a restricted maternity service.

The hospital should not be so large that the human element is either lost entirely or too much attenuated. It would be more merciful and satisfactory to build several smaller hospitals under the same administration in different sections of the city. I believe that 200 beds should be the limit in size.

In trying to guess how many beds are needed by a community one may figure that each bed will care for twenty-five patients a year. This does not include waiting pregnancy cases or isolation beds. There should be two nurseries on each floor, one of which is fitted with cubicles for temporary observation. This subject is discussed later on in this article.

C. *Shape.* It seems to me the best shape for a hospital is the T shape. A large hospital could be two T's or an H, but I would not have the entrance in the court. While architecturally striking and beautiful, such an approach is noisy and hard to keep clean. Furthermore, the ground space could be more advantageously used for a garden for the ambulant patients. The most important feature of any building devoted to the care of the sick is the element of sunlight. Too much emphasis

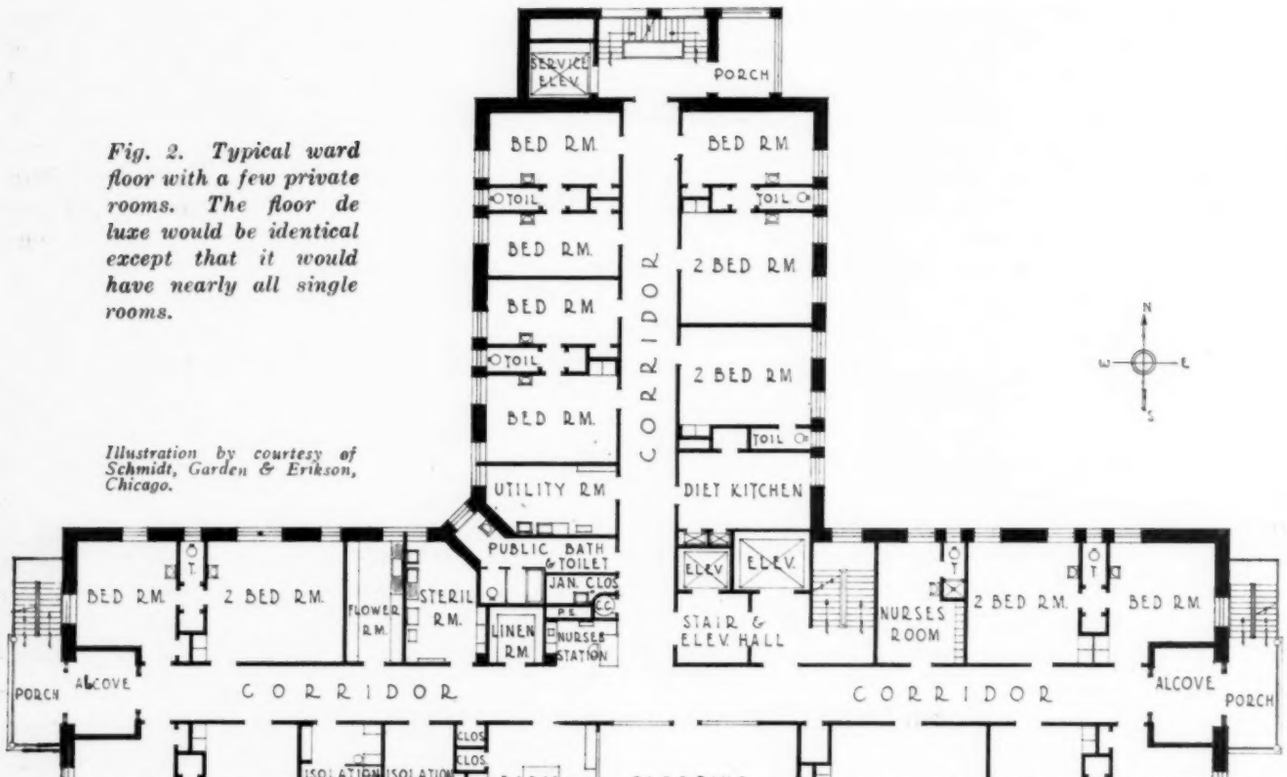


Fig. 2. Typical ward floor with a few private rooms. The floor de luxe would be identical except that it would have nearly all single rooms.

Illustration by courtesy of Schmidt, Garden & Erikson, Chicago.

cannot be put upon the necessity of having sunlight all over the hospital. It is the best germicide we have, it promotes comfort, happiness and the recovery of the patients, at the same time improving the morale of all that work in the building. Let there be sunlight!

The number of floors will of course depend on the number of beds. It is not economical to have two supervising nurses on a floor and one nurse cannot supervise more than thirty-six patients, she will have enough to do with twenty-five and their babies. It is likewise hard for one nurse to watch two floors, but in small institutions this will be necessary. Obstetric nursing is more exacting than other kinds.

The student nurses rotate through the maternity ward faster than they do through any of the other departments. The medical responsibilities are greater, there is more to learn in a short time, the technique is more difficult of mastery, all of these necessitate a relatively larger number of supervisors to teach the technique to successive groups of young nurses, to guard against mistakes and to prevent epidemics. Therefore the floors should be adapted to the service.

The building itself should be well out of the ground. Pettenkofer, sixty years ago, proved the dangerous possibilities of high "ground water."

D. and E. Many mistakes in building hospitals are made because the board of trustees, the doctors, and the architect do not get together and decide just what is wanted. Every community has individual problems, every doctor has his own notions, every building committee of the trustees has certain opinions and the architect has to perform mental gymnastics to satisfy everybody, especially as there is always a sharp limit put on the expenditure of money. I believe the main responsibility for the internal medical arrangements of a hospital should be put on the doctors. Fortunate indeed is the institution that possesses one or more who are architecturally minded.

At a meeting of the board of trustees and the heads of all the medical departments, with the hospital superintendent and superintendent of nurses, the general plan of the whole institution should be discussed. Then each medical department head should be instructed to present to the building committee, of which the hospital superintendent is a member, his ideas and requirements. The medical department heads should be an advisory committee, and the chief of staff a member of the building committee.

For the special maternity the same plan of procedure is needful. The problem is of course much simpler than in a general hospital.

Before attempting the apportionment of space and the arrangement of the different maternity

services, the obstetric staff must have come to perfect agreement as to what shall be their obstetric technique. The hospital must be designed to fit the technique. The building is a vast instrument constructed for the special work to be done. Minute details, of course, cannot and should not be considered at this time because they change as our science and art advance. The broad principles of practice demand recognition and definition. The following are a few of the questions that the architect will have to have answered before he puts a pencil to the tracing paper:

Will there be a prenatal clinic in the building? Will the attending staff have consultation rooms in it? Will there be accommodation for waiting maternity patients, married and single? Will an industrial department be made for the latter? How many beds are needed for pay, part pay, and charity patients? How much teaching will be done? How much room is necessary for students in residence, for day students, for outside physicians and for "observers?" Will amphitheater clinics be held, and for how many? What laboratories, clinical and research, are needed and how are these to be distributed? Will the interns work in eight-hour shifts in the birth rooms, or do they need sleeping quarters there? Will gynecologic work be done in the maternity or only that which is part of obstetrics, such as ectopic pregnancy, laparotomy for fibroids and pregnancy, cesarean section, the treatment of rupture of the uterus? Will labors be conducted as surgical operations or according to the old manner of delivery in the home? Will the delivery room be a sublimated bed chamber or a real modern operating room? Will instruments be boiled or autoclaved? Will basins be sterilized in containers and stored, or boiled just before use? Will artificial light be used or studio light (north exposure with broad high-arched window)?

Questions to Be Answered

Do the doctors prepare patients for delivery? With or without bath, shaving, etc.? What kind of a bathtub should be provided? Will the parturient pass the first stage of labor in her own room or be sent to the delivery floor as soon as labor is declared? Is twilight sleep to be used? Ethylene anesthesia? Will a bed or table be used for delivery or both? Will the babies be kept in a large nursery or with the mothers? Carried or wheeled to the mothers for feeding? Bathed in the nursery or in a special room? On a bath slab or by sponge from basins?

What arrangements are to be made for isolating suspect cases before sending them to the septic pavilion? What do the patients need in the matter of power, light and heat in their bedrooms? What is necessary in the way of special diets for both mothers and babies? Should there be a central milk modification plant or is this done on the floors? Are the puerperae to receive routine surgical dressings or to be treated as normal menstruating women? What special precautions are needful in the laundry, first to obviate the transference of infections; second to protect the babies from rough clothing, etc? What shall be done to limit the noises in and about the hospital?

Naturally it is impossible in these pages to describe even a few of the possible combinations of all these items of construction, and I believe the best way to convey my ideas of what a maternity should be is to give a brief description of the Chicago Lying-in Hospital and to present sample floor plans, designed after those on which this institution is working so satisfactorily.

Scope of Work

The Chicago Lying-in Hospital has 140 beds and has a 95 per cent maternity and a 5 per cent gynecologic service. Only operative gynecologic cases are accepted. There is in addition to the indoor maternity, a large outdoor, home, obstetric service. The operative and pathologic work occurring here is transferred to the hospital. Teaching is done for small groups of students and observers and a few large clinics are held. There are no special research laboratories.

There are five interns on duty in the dispensaries, and eight live in the hospital, also one obstetric resident. We deliver over 4,200 babies and do about 200 gynecologic operations a year. About 1200 babies are born in the home service. We find fourteen physicians none too much for this amount of work. The resident and the interns on birth room duty live on the birth room floor so as to be close to their work. This arrangement, though expensive, saves lives.

Sixty nurses are in training all the time and sixteen full-salaried supervisors are required to teach them the technique and to carry on the high standard of work we have set. There are, in addition, four supervisors at the dispensaries caring for the home service. One supervisor to every three nurses is expensive but it saves lives and establishes high ideals.

Fig. 1 shows the birth room floor (the sixth floor) as I believe it to be the most advantageously arranged. It will care for teaching and for private cases, and conserves the nurses' and doctors' energy. It embodies all the advantages of our present actual working plant, and all the improvements we have learned by experience.

There have been practically no changes on the

ward floors. A few additional administrative facilities have been added. There is great demand for medium priced rooms, and two-bed wards. Anyone interested in the detailed original plans of the hospital will find them reproduced in the June, 1915, issue of THE MODERN HOSPITAL.

On the birth room floor there are four delivery rooms, ten beds for women in the first stage of labor, and one obstetric surgery. This appears to be a larger number of rooms than is necessary; in other words, we seem to have a greater provision for peak loads than is required. Experience has not shown this, but the contrary. Obstetric practice, unlike surgery, is a succession of peak loads, indeed the rush of cases is often so large that the patients dam back into the delivery and labor rooms, the floors downstairs not being emptied fast enough.

Ward Service on Sixth Floor

Our practice is, as soon as labor declares itself, to send the patient to the sixth floor so that she can be under the constant observation of the skilled birth room supervisors and the intern on birth room duty. "Precipitates" on the floors and on the carts are thus largely eliminated. It often happens that a slow labor case may spend several days in the birth rooms. For this reason ward service is provided on the sixth floor.

The floor illustrated will care for 4,000 labors a year, working at near capacity and providing there are enough beds downstairs to receive the puerperae as fast as they are delivered. Even in well planned hospitals this is not always possible, and the parturients crowd into the birth rooms which are already congested with patients for whom there is no room on the floors. We cannot deny admission to a woman in labor.

The sterilization of surgical supplies for the whole hospital is done by the supervising nurses on the birth room floor. This adds to their labors, and increases the number of such nurses required, but guarantees perfect sterilization, gives a short haul from the sterilizer to the patient, places the responsibility for the asepsis of the labor just where it belongs (thus minimizing the danger of contamination), emphasizes the importance of sterilization in the minds of the nurses in training, and teaches them the methods of the preparation of obstetric supplies, rubber gloves, etc. While this system is cumbersome, requires a great deal of space on the birth room floor, makes considerable noise and steam, and is expensive, I believe the good moral effect on the nurses, students, doctors, observers, patients and their husbands, more than outweighs the disadvantages and justifies the cost and the trouble.

The water for operations and deliveries in our hospital is sterilized on the seventh floor and conveyed to the birth rooms in tin-lined pipes. This method is hard to keep functioning perfectly and in the improved floor plan, shown in Fig. 1, provision is made for sterile water directly adjacent to the birth rooms. The birth room supervisors will also sterilize the water used on the ward floors. The three pairs of hot and cold water sterilizers fully guarantee against any breakdown paralyzing the service.

There are so many undreamed of possibilities for "breaks" in the obstetric-surgical technique that it is imperative not to trust such an important and complicated system to non-medical persons. Experienced and capable trained nurses must provide and watch over everything, and it would be well if the medical staff also frequently inspected the system to find out its flaws, and to discover any undesirable innovations that might unauthorizedly have crept in.

The space devoted to rest rooms and study rooms for the attending physicians is not wasted. A place to sleep, a place to rest, a library for study are necessary to secure good work from the doctors. Obstetric work at its best is hard on the doctors and they are less likely to skimp it if given good working conditions. Many babies' lives and not a few mothers' lives as well have been saved by having the doctor nearby in sudden emergency.

Typical Ward Floor

Fig. 2 is a typical ward floor. There are thirty-five patients on this floor. All the administrative facilities are centered about the supervisor's desk which is placed in a commanding position at the center of all the traffic. From her desk the supervisor can see the elevator, stairs, the three corridors, the medicine closet, the nursery and the nurses' call board. At the right are the linen room and the surgical dressing room; on the left, the linen chute, the janitor's closet, the patients' toilet, the utility room and the diet kitchen. This arrangement, which was copied from that of the present Chicago Lying-in Hospital, has proved excellent and with certain added rooms, shown on the plan, should be ideal.

Deserving of particular notice is the isolation nursery with cubicles for the temporary segregation of babies suspected of having infectious sore eyes, pemphigus or syphilis. After a day or so of observation they are returned to the general nursery or sent to the isolation pavilion. While it would be desirable to have all the large wards (three and four beds) on one floor and all the single rooms on another, and also a floor especi-

ally arranged for the *de luxe* rooms, architecturally this cannot be accomplished in an economical manner, and further, there would be too many patients on the large ward floor and not enough on the others.

Bedpan service is provided for all the rooms. It is desirable to eliminate the bedpan traffic from the corridors entirely. Some concession may have to be made to expense. Bedpan traffic in the corridors is unesthetic, embarrassing and ill-smelling; on the other hand, individual toilet facilities are a great direct safeguard against infection and epidemics. The extra expense of plumbing installation and upkeep is fully repaid in the end. Between each two private rooms and wards there should be bedpan service in a room facing the street, accessible to sunlight and free natural ventilation. While more expensive than inside closet toilet rooms with artificial ventilation, this plan is cleaner, quieter and more hygienic.

In general, I believe artificial ventilation of wards and utility rooms in hospitals is of doubtful value, and I hold that it may be of distinct danger. When discontinued, either temporarily or permanently, as I have found occurs in many hospitals, regardless of the expense of the installation, the flues become potential disseminators of infection. The great cry in modern hospital construction is individualization of the unit occupied by the patient. Yet here by means of intercommunicating flues all the measures for isolating the infectious patient are nullified. The most powerful air current that can be drawn through a room without creating a roar that will keep everybody awake, is not sufficient to check a natural back draft from a strong wind outside, and when the fans are still, a common, almost usual occurrence, the natural forces have full sway. Thus the dust and effluvia from an infectious disease gain access to and pollute the whole ventilating system.

Every room should have running hot and cold water and the faucets should be of such a pattern that a basin or a pitcher can be filled comfortably. The reasons for this are comfort, economy, and prevention of epidemics.

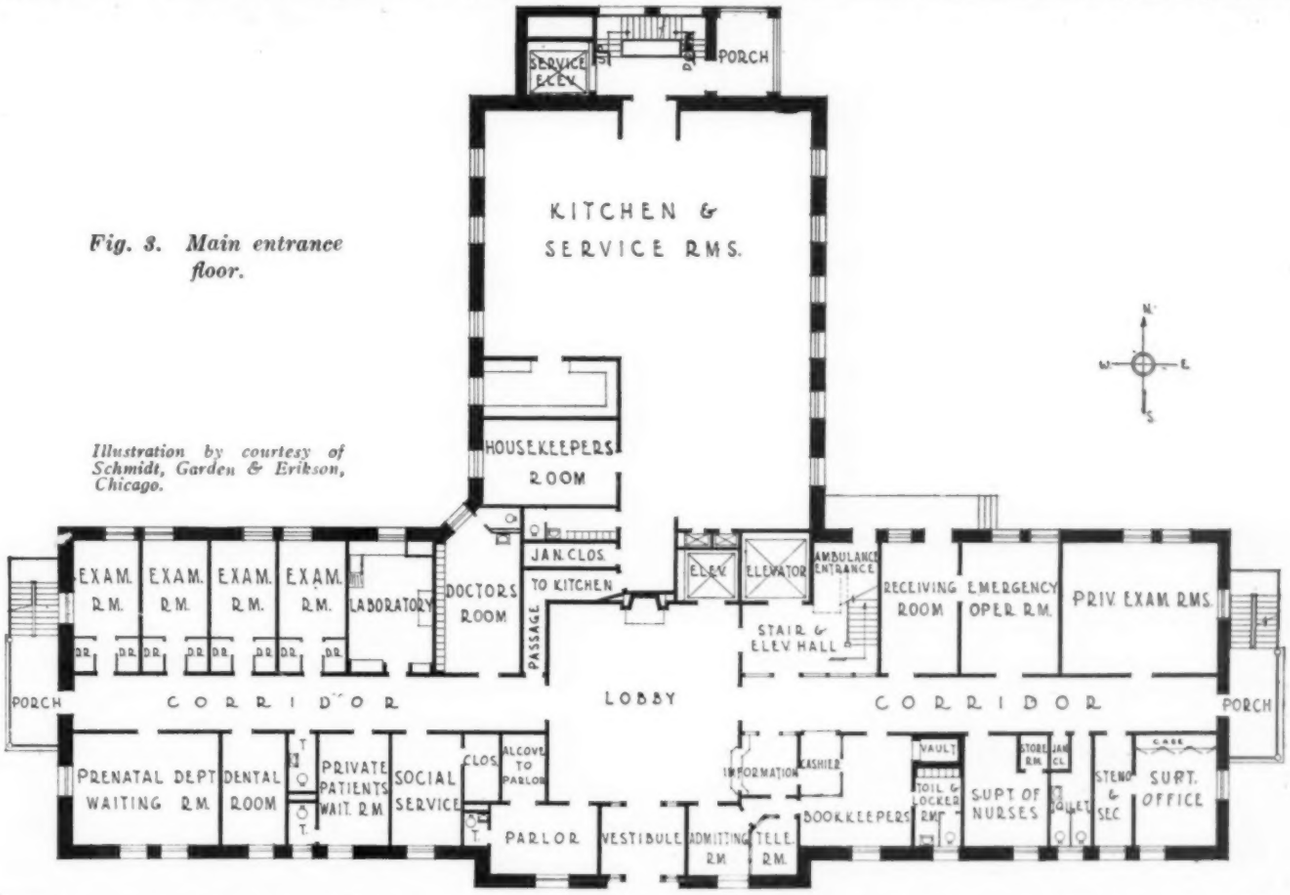


Fig. 3. Main entrance floor.

Illustration by courtesy of Schmidt, Garden & Erikson, Chicago.

The floor *de luxe* should have a few rooms with baths, that can be arranged as suites. Large rooms, with sunny exposure and expensively furnished, are in increasing demand. Rooms with individual toilet are likewise desirable. Rich people are just as deserving of good hospital care as paupers and they should be furnished with luxuries if they desire them, for they contribute largely to the running expenses of the hospital.

Part of one floor should be designed for the living rooms of pregnant women under observation, for those whose babies have died, and for obstetric gynecological patients. This floor should

be especially arranged for the treatment of hyperemesis gravidarum, and pre-eclamptic toxemia, and should have facilities for the small amount of physiotherapy such an institution administers.

On the main floor are the offices, the prenatal clinic, the receiving rooms, the lobby, the kitchen. Provision is made for attending physicians to see their cases at the hospital. (See Fig. 3.) It is advantageous for them as well as for the hospital to provide such facilities.

Too much care and thought cannot be given the design and appearance of the entrance vestibule and lobby. A woman in labor, apprehensive, strange, fearful and in pain should have a warm bright reception, at night as well as by day. The privacy of obstetric work should be respected and the modesty of the woman, whose figure betrays her condition, should be protected. Retiring rooms, or parlors with toilet facilities, should lead off the main lobby.

The plans illustrated here do not show the gynecologic operating rooms with their anesthetizing rooms, the x-ray department, the classrooms for students and nurses, the dining rooms, library, the museum, the registrar and history rooms, the physiotherapy department, or the research laboratories. These are special problems for each institution.

F. *Architectural Isolation.* One of the main features of our institution is the strict isolation of the infected patients from the clean ones. We believe that administrative isolation is possible only in Utopia, that as long as we have to rely on human beings we must make the institution accident-proof, and must safeguard our patients against all the frailties of our kind. Therefore we built the mothers' aid pavilion, and to it are taken from the main building all cases with open infection, such as puerperal sepsis, infected stitches, breast abscesses, colds, bronchitis, pneumonia, open syphilis, pemphigus, pustulosis and tuberculosis.

Isolation Unit Hardest to Manage

By far the most difficult to design and the hardest to manage is the isolation unit, named the Mothers' Aid Pavilion, because it was built and presented to the hospital by the Mothers' Aid Club, a band of devoted and enthusiastic women.

How to uphold the principle of architectural plus administrative isolation in operation under one roof was and is a formidable problem. While it appeared to work out well on paper, and although we built a pavilion embodying the principles laid down, we are not nearly certain that we have succeeded in practice. The pavilion is a complete hospital in itself, with its own kitchen, dining rooms, laundry, laboratories, disinfectors, operating rooms, quarters for nurses, interns and help. There is no connection with the main building except through pipes to the boiler room for heat, light and power.

The first floor is devoted to administration. It also contains the mortuary and laboratory. The second, or first patients' floor is intended for the highly infectious cases, such as scarlet fever, erysipelas and virulent sepsis. It is half surrounded by a balcony so that the rooms can be approached from without for removal of the soiled dressings and bedding. There is an incinerator on this outside balcony for the destruction of infectious material. The bedding is soaked in antiseptic solution and carried, via the balcony, to the laundry. Each room on this floor has its own toilet, lavatory, bath and sterilizer, either steam or electric. There is a dish sterilizer in the diet kitchen.

Third Floor for Clean Cases

The third floor is for the relatively clean cases and here are the operating suite, the sterilizing rooms and the nursery. We provided for three rooms of two beds each for closed infections and for the clean mothers of infected babies. The next time we build we shall have only single rooms. The fourth floor is occupied by the nurses and the female help on duty in this building.

On the first floor we have a special operating room for infected cases, such as breast abscess or pelvic drainage, in order to keep the big operating and delivery room as clean as possible. For the same reason many septic operations are done in the patients' own rooms.

The management of the pavilion is strict and too detailed for description here. A few points may be mentioned as examples. No one from the pavilion is permitted in the main building without having changed his clothes and walked around the block; and even then he is allowed only in certain rooms and not for long. All the mothers' aid pavilion linen has a red thread run through it in several directions. A sheet, or towel or gown from the mothers' aid pavilion is thus detected at once if found in the main building. The history sheets from the pavilion are sterilized in formalin before being sent to the registrar's office which is in the main building. Physicians and supervisors from the main building wear gowns and gloves while making rounds in the pavilion. The wall and window washers have separate pails, brushes and cloths for the pavilion.

How has this plan worked out? Not as well as expected but our expectations were too sanguine. True, we have had few cross infections but these few are too many. In the first place seventeen

beds are not enough for the work that comes to us from outside and inside. We are isolating more cases than we at first thought was necessary.

If we build again we must make still greater effort for more perfect architectural isolation. Overcrowding must be made impossible. Individual isolation must be provided for babies.

All Patients' Rooms Single

All the patients' rooms must be single, each with toilet, lavatory (possibly bath), and connection for individual electric sterilizer.

There should be numerous accessible lavatories for visiting physicians on each floor.

The balcony idea should be retained and extended. Porches should be attached to some of the rooms, but should not shut out the sunlight. Large windows of the casement type, or doors, are to be provided for fresh air and sunlight. In addition a solarium is to be placed on the roof.

There should be a clean nursery with cubicles, and several small isolation nurseries completely equipped. There should be at least two operating rooms, one for clean and one for septic cases, and equipment should be provided for operating in the patient's own room.

The washers in the laundry should be high pressure, and the arrangements for handling infected linen such as to preserve the clean from contamination.

It is of prime importance to place the mortuary in a separate building or at least make it a semi-detached annex with individual entrances. The autopsy table must be at the bottom of an amphitheater pit, accessible to none of the spectators, who must be kept away by a breast-high barrier. The entrance to the seats must be obtained from outside the pit, directly from the street or grounds. The floor of the pit should be drained, and generous flushing devices installed. The mortuary should be supplied with sterilizers, gowns and gloves. All its floors should be vitrified tile provided with water outlets and drain for flushing and scrubbing. I have seen spectators of the autopsy performed on a puerpera who died of peritonitis, trail pus from the opened belly throughout a clean hospital. It was a shocking break in technique.

While all these things are important and helpful toward the ideal, we must have intelligent supervision by the doctors and nurses. They must be on the alert all the time watching every avenue possible for the transference of infection. The great principle is to confine the bacteria, and the bacteria carrying fluids to their source. Do not let them get on to the floors, bed or tables, and such as do contaminate instruments, linen and utensils, are to be destroyed before they can be spread about.

G. *Special Services.* As has already been said, the hospital is an immense instrument especially fitted to serve a multitude of purposes. The maternity department is the most complicated of all because of the baby and the combined medical, surgical and obstetrical technique required. The obstetric case is nearly always an emergency case, and often accidents occur that require instantaneous and radical action. Each birth room therefore must be equipped to handle all the complications of labor, all the supplies required are to be in it, also all the instruments (except those for craniotomy and cesarean section), and the anesthetizing apparatus.

We believe an obstetric case is as important as a surgical case and therefore when an operative delivery is to be performed the patient should be on an operating table. Normal deliveries are made on the bed. The birth room therefore is provided with both bed and table. This is expensive and troublesome but it elevates the ideal and the patient receives better care.

We use the drum system for sterile supplies, not trusting cloth wrappings. Instruments and basins are sterilized by boiling in soda solution just before they are to be used. This is messy and takes some time but I believe it is safer than to have them wrapped and autoclaved and stored. If a practical high pressure instrument boiler could be invented we would use it. When instruments are boiled in a seething alkaline solution there is both mechanical, chemical and heat sterilization. The soda eats into dried pus or blood hidden in the crevices, locks and corrugations of the instruments. The nickel plating too is better preserved.

Birth Room Equipment

For the rest, the equipment of a birth room is the same as that of a surgical operating room. The receiving crib for the baby, of course, must not be forgotten. This may be heated by a few electric lights and should always have a cabinet for the nitrate of silver solution for the baby's eyes, and materials for its first oiling. Some hospitals still use the hot and cold bath for resuscitating asphyxiated babies. We hold this method cruel, shocking, unnecessary and dangerous.

A good place should be provided for the writing of the obstetric records, and a large blackboard should be put in the doctor's room on which is written the progress of every labor case on the floor.

Vitrified tile floor and colored tile walls should be used in the birth rooms and light tile in the sterilizing rooms.

In some convenient spot there should be a "specialty closet." Here are kept, in working order, labeled plainly and complete with written instructions for use, all the special instruments, such as blood transfusion sets, instruments for intravenous medication and venesection.

The preparation room has a slab bath of special design. If a combination shower bath and slab could be made it would be a great improvement. The toilet facilities for the parturients are of importance. There should be provided stalls with commodes and a hopper in which to empty the dejecta. Parturients should not sit on the usual water closet.

The nurseries should provide the legal amount of cubic feet of space for each baby, although, with proper ventilation a smaller amount than that specified by most city ordinances would be enough. The bathing room should be distinct from the sleeping room. A sink with slab, foot pedal or knee action faucets, a laundry tray, a bottle and basin sterilizer, a refrigerator, and a suitable bath table comprise the equipment. We do not approve of bathing slabs, which are cold, not aseptic and messy. The temperature regulating mechanism for the water is not always reliable, and the shower more often than not, gets into the babies' eyes, nose, mouth and navel. Each baby is given a freshly sterilized little basin for its bath. The finish of the baby's bath room should be tile, if possible.

Opinions Differ on Incubator Room

Doctors differ in opinion in regard to the incubator room. Some prefer a heated room, some individual incubators connected with outdoors, some warm nests (the Hess instrument) which can be placed in the general nurseries. At the Chicago Lying-in Hospital we have a special room equipped with three individual incubators with independent ventilating flues and all the appurtenances needful for the premature babies. This arrangement is superior to any other and should be recommended wherever it is possible to get experienced nurses to take charge of the babies. But the expense is so great that I believe, for general practice, the Hess instrument placed in the floor nursery will give most satisfaction.

The sterilizing room on each floor is an important item. We keep the surgical portion of the puerpera's treatment distinct from the bedpan traffic. The sterilizing room is large enough to accommodate the dressing carts, it has hot and cold sterilized water for the dressings, an instrument and a utensil sterilizer, a case for supplies, a sink with large drainboard and a hopper. Tile is the best finish for sterilizing and utility rooms.

Each floor must have an isolation nursery and it should be divided by marble and glass partitions into three cubicles. Each cubicle has a table, a shelf carrying the infants' necessaries, a ring for a basin of hand solution, a peg for the nurses' gowns and a crib for the baby. Equipment consists of a small sterilizer, a case for supplies, a sink with foot pedals and drain board, with shelf for soap and towels.

H. *Noise.* This vitally important matter is usually much neglected by all concerned. In locating the hospital a quiet neighborhood must be selected. Closeness to transportation is not such a great desideratum as formerly, thanks to the automobile. Easy accessibility for visitors is not an unalloyed blessing. Most patients have too many visitors for their own good and safety. Noise about and in the hospital should be reduced to a small minimum. The amounts of morphia and veronal given to procure sleep will be much less in a quiet hospital than in a noisy one.

Grounds Should be Well Planned

The hospital grounds should have fitted, cedar block paving, or smooth asphalt. We have found it impossible to get the delivery trucks to stop their engines while unloading. Therefore this nuisance should be relegated to a distant part of the institution. "Zone of quiet" signs are useless.

Noises within the hospital are an even greater nuisance and they could be largely eliminated if the doctors, interns and nurses had the proper spirit. Loud talking in the corridors, slamming of doors, dropping of basins, rattling of carts, noisy moving about—all are largely eliminable.

The clanking of steam pipes, sousing in water pipes, noisy water closets are matters for the attention of the plumber. Elevators should be enclosed and the operating machinery should be in the basement, both to exclude noise from the floors and to be within easy supervision by the engineer. Diet kitchens are to be separated from patients' rooms by quieter rooms, such as nurses' rooms or closets. Noisy patients should be kept in soundproof rooms, indeed modern soundproofing should be part of the construction of the whole hospital. The nurseries should have double walls.

Unfortunately the birth rooms are the hardest places from which to eliminate noise. Soundproof walls and doors help a great deal, but we have to know what the parturients are doing and we learn this from the sounds issuing from the labor rooms. Unless each parturient has a special nurse to watch her every minute, the doors must be left open. A patient may have her baby alone and she or it may die before aid could be given her.

To prevent the noises from getting out of the birth rooms and annoying patients on the lower floors is likewise difficult. If the windows are to be opened it is impossible to eliminate all the sounds, no matter how much morphine, scopolamin, synergistic analgesia or ethylene may be given. If the birth room windows could be sealed and artificial ventilation used, the noises could be kept from escaping, but would this system be practical? One thing would have to be insisted upon —the ventilating system for the birth rooms would have to be separate and distinct from that of the rest of the hospital, air being taken from the roof far from the outlets of the other ventilators.

My experience with the ventilating system in our own hospital, and my observation of the operation of those in several other institutions make me doubt the feasibility of such a device in a busy birth room. The noise of the fans, the dust movements near the intakes and outlets, the high and low temperatures of the outside air, the moisture, the heating of the rooms, the sense of confinement and the dangers of infection (absence of sunlight), all combine to present a formidable problem. In a few hospitals the idea of a dustless operating room, that is, a closed chamber supplied with washed, filtered, warmed (or cooled) air, led in and removed by fans, is being considered. Perhaps some of our infections of mysterious origin may be thus prevented. I fear such an ideal birth room will not be realized until far in the future.

Artificial Ventilation Costly

The item of expense of installation and upkeep would cause artificial ventilation to be rejected by most institutions unless it could be proved distinctly beneficial.

Much, however, could be done by the administration—the doctors, interns, and especially the nurses—to minimize the evil of noise, but in my experience they forget about such refinements of practice in the interest of their work. The architect can help a little by the arrangement of the rooms.

In conclusion I may reiterate that a maternity hospital constructed on the lines above indicated will cost a great deal of money both to build and to maintain, and a great deal of painstaking effort to manage, but in the end all will be more than repaid. The institution will acquire a firm place in the affections of the childbearing mothers, and the reputation of the board of trustees, the physicians and the nurses will spread far and wide, but the greatest return to the hospital administrators will be their freedom from heartache.

ENGLAND NEEDS "PAY" WARDS

In outlining the changes in types of hospital patients since medieval times, Dr. R. G. Hogarth, in a recent issue of the *Lancet*, touches upon the need of providing hospital facilities for the great middle classes who are able to pay a certain amount of their hospitalization bill and are more than willing to do so if a suitable method of term payment can be devised.

He states, "It is certain, therefore, in my opinion, that we shall see a steady extension of the principle of the paying ward, and even of the paying hospital, for the use of the patient who pays in accordance with his means. In many hospitals today all but the very poorest patients are expected to contribute to the cost of their healing, and there is little need to lament the disappearance of the old principle that the hospitals were absolutely free—a principle which, in fact, was often grossly abused by many patients.

"The interests of the middle classes deserve attention no less than those of any other class. May we not, therefore, look forward to a time when every general hospital will be well equipped with paying wards or will have a paying hospital in association with it, served by the same staff and the same nurses? A middle-class patient who is a suitable hospital case could be seen by the almoner of the hospital and, after stating his income and position, terms could be arranged according to the means.

"Naturally that will open up the question of fees for the surgeon or the physician, and some obvious and possibly difficult adjustments would have to be made; but no vital principle that I can see would be endangered by the payment of these special fees, or even by the hospital itself making a substantial profit on such cases which would help toward the maintenance of more beds in the non-paying wards. Such changes are likely to be gradual; we can carefully note what effect, if any, they have upon the flow of subscriptions.

"Personally, I do not think that the charitable donor is likely to object to a middle-class paying patient receiving a share of the fruits of his bounty. He had a much more valid grievance against those who abused the freedom of the hospital and never contributed a penny to its funds. The medical profession is generous in accommodating its fees according to the patient's income. But every medical man knows cases where the serious illness of the breadwinner or the wife or child has exhausted the savings of a middle-class home or crippled it with a load of debt."

HOW ONE SUPERINTENDENT REDUCES ACCOUNTS RECEIVABLE

As the problem of collecting hospital accounts is a difficult one for many superintendents, the methods used by other hospitals are of interest, even though policies differ with localities and the individual institution. The superintendent of a 100-bed institution has a method which has proved effective in her particular hospital. Once a month she makes the practice of turning the old accounts over to the finance committee of the board of trustees. Accounts are turned in for each physician showing the number of patients he has had together with the number of unpaid accounts.

Before pay patients leave the hospital they sign a judgment note calling for 6 per cent interest on the part of the bill left unpaid. This system has cut down the outstanding accounts to a large extent and, according to the superintendent, patients are not offended at this procedure.

PROVIDING A HOME AND SCHOOL FOR FOUR HUNDRED NURSES

By A. K. Haywood, M.D., Superintendent, Montreal General Hospital,
Montreal, Quebec

THE NEW nurses' home and training school of the Montreal General Hospital, Montreal, was formally opened on December 20, 1926, by the Hon. L. A. Taschereau, Premier of the Province of Quebec.

Situated on property north of the hospital and separated from it by Dorchester Street, the new home is the culmination of many years of careful planning on the part of the hospital board, architects and staff and it has solved the double problem of housing the nurses and providing adequate and modern facilities for the training of the student nurses.

The façade of the building is constructed partly of buff colored stone and partly of red brick. The decoration is chiefly of a symbolic character and represents the familiar healing rod and serpent of Æsculapius. On either side of the main entrance are bas reliefs of Florence Nightingale and Jeanne Mance. The subsoil being of clay, it was necessary to drive cement piles into the ground before the foundation could be laid on which to erect a building of this height. Concrete was used for the footings, foundation walls, basement floors and all work performed underground; each column, pilaster, beam and girder of the building has been covered throughout with reinforced concrete.

Owing to the location of the home, it was necessary to connect it with the hospital by a tunnel under the street, thus obviating the everlasting struggle into and out of overcoats made necessary by our wintry weather. Through this tunnel is brought the heating and power service from the main power plant of the hospital proper. The pipes conducting the brine for refrigeration also pass through this tunnel and connect with the refrigerators on each floor of the home. A water cooler makes possible a continuous supply of ice water in each kitchen and at the fountains in the corridors. All piping is brass and noncorrodible.

Perhaps the most conspicuous of the labor-saving devices incorporated in the new home is the aluminum laundry chute running the full height of the building.

All telephone booths and departmental phones are connected with a switchboard in the inquiry office. Each nurse can be signaled to by means of a buzzer in her room and a reply signal can be sent to the inquiry office. This saves many steps and gives prompt service to the nurse while she is in her room.

The design of the building as it now stands permits of enlargement to twice its size in the future. While it now accommodates 208 nurses, the completed plans of the hospital will necessitate a staff of 400 nurses. With this in mind, future extension was planned for. The ground floor, with the reception rooms, and the second or schoolroom floor have been completed for a capacity of 400 nurses, so that, while they are larger than is nec-

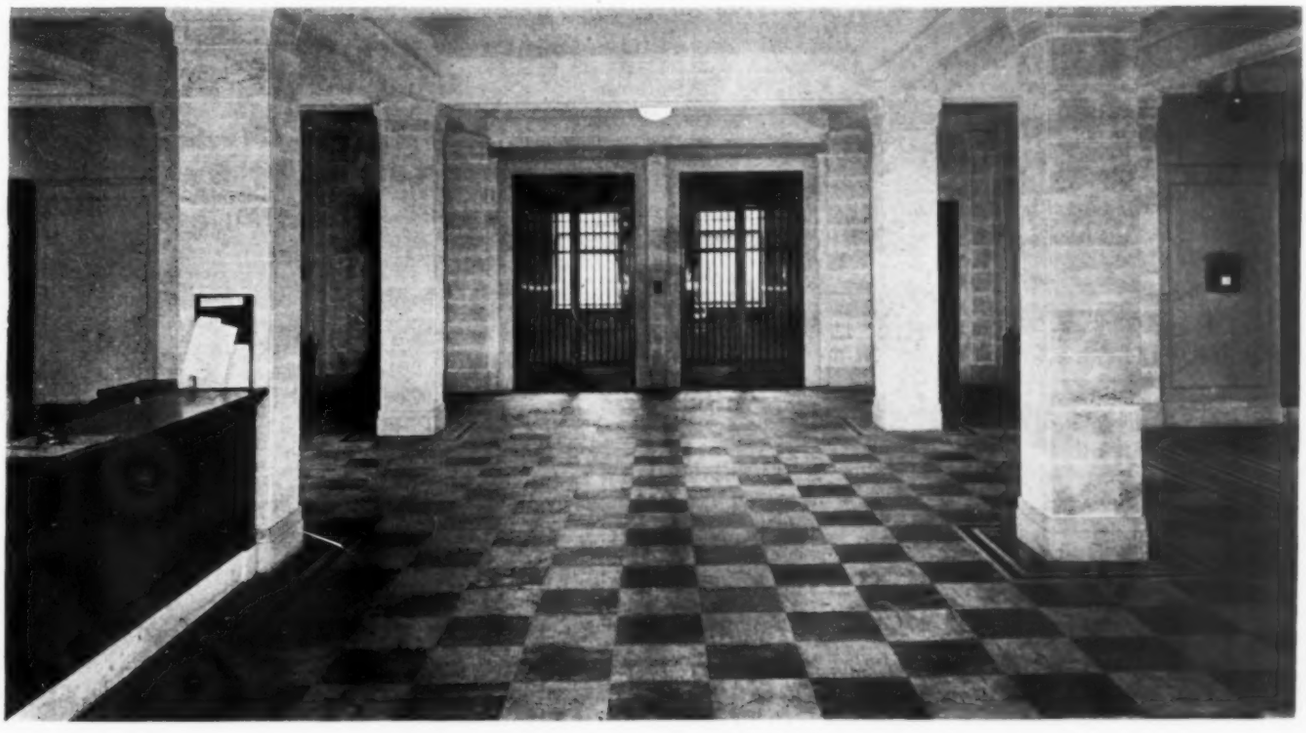
Illustrations by courtesy of Fetherstonhaugh & McDougall, Montreal

Front view, Montreal General Hospital Nurses' Home

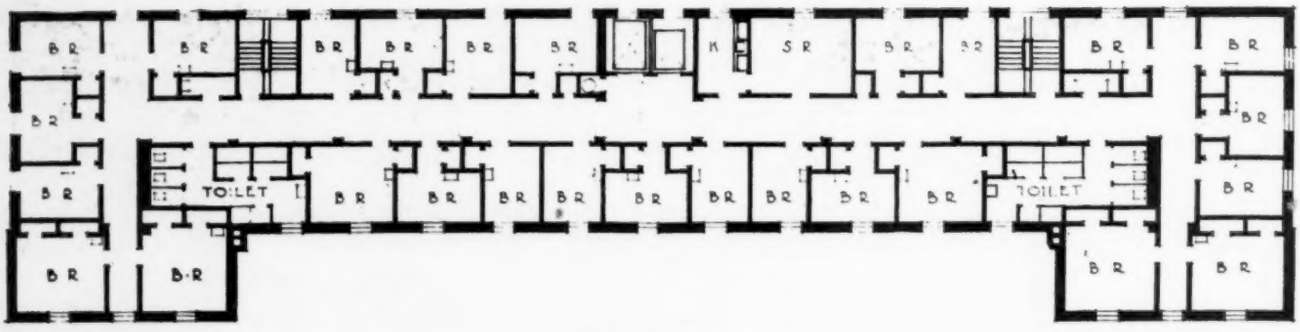
A view of one of the living rooms

essary for the present, their usefulness will not be disturbed by future extensions.

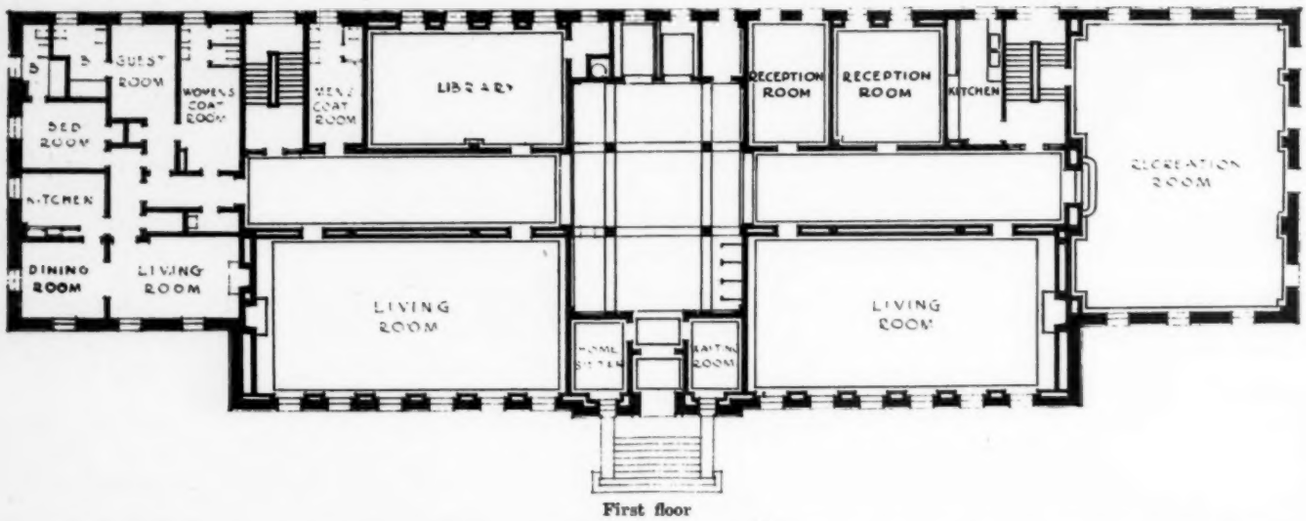
The basement floor has many useful features; a locker and lounge room for female help, with a separate room for toilet facilities; a nurses' sewing room; a small laundry with four tubs; a steam drying room and two ironing boards; a large furniture storage room; an equally large trunk room; a rubbish room with gas incinerator; a receiving room; a locker and toilet room for men; a room fitted with a vacuum system for rug cleaning and repairing; a machinery room; a soiled linen room into which the laundry chute opens; a linen room and also a separate room for



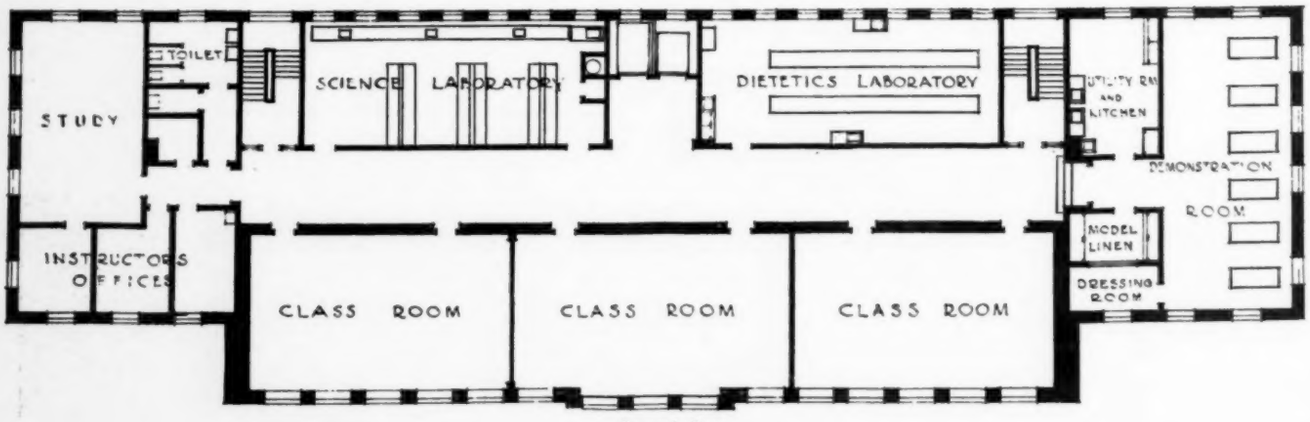
View of the main hall looking toward the elevators



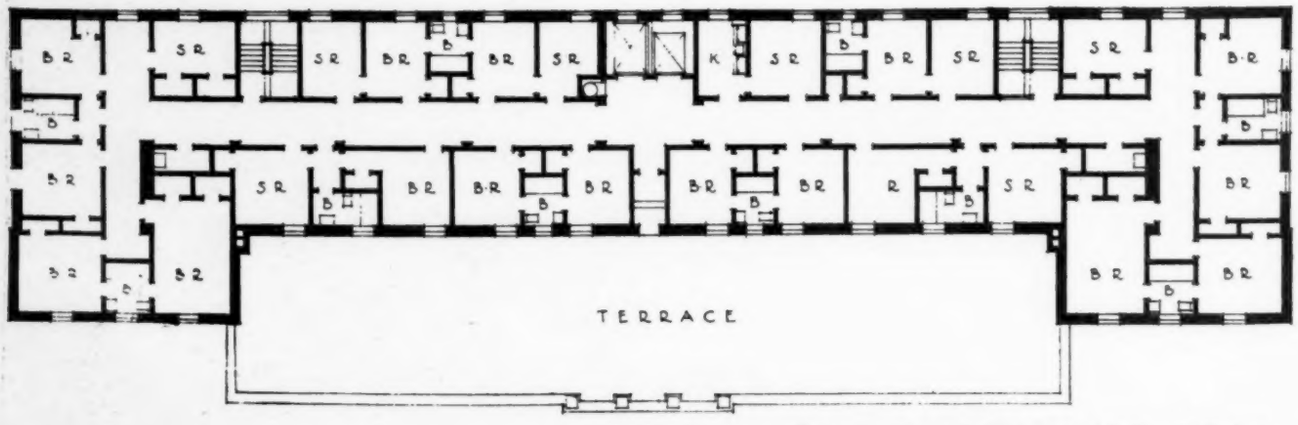
Typical floor



First floor



Second floor



Plans by courtesy of Fetherstonhaugh & McDougall, Montreal

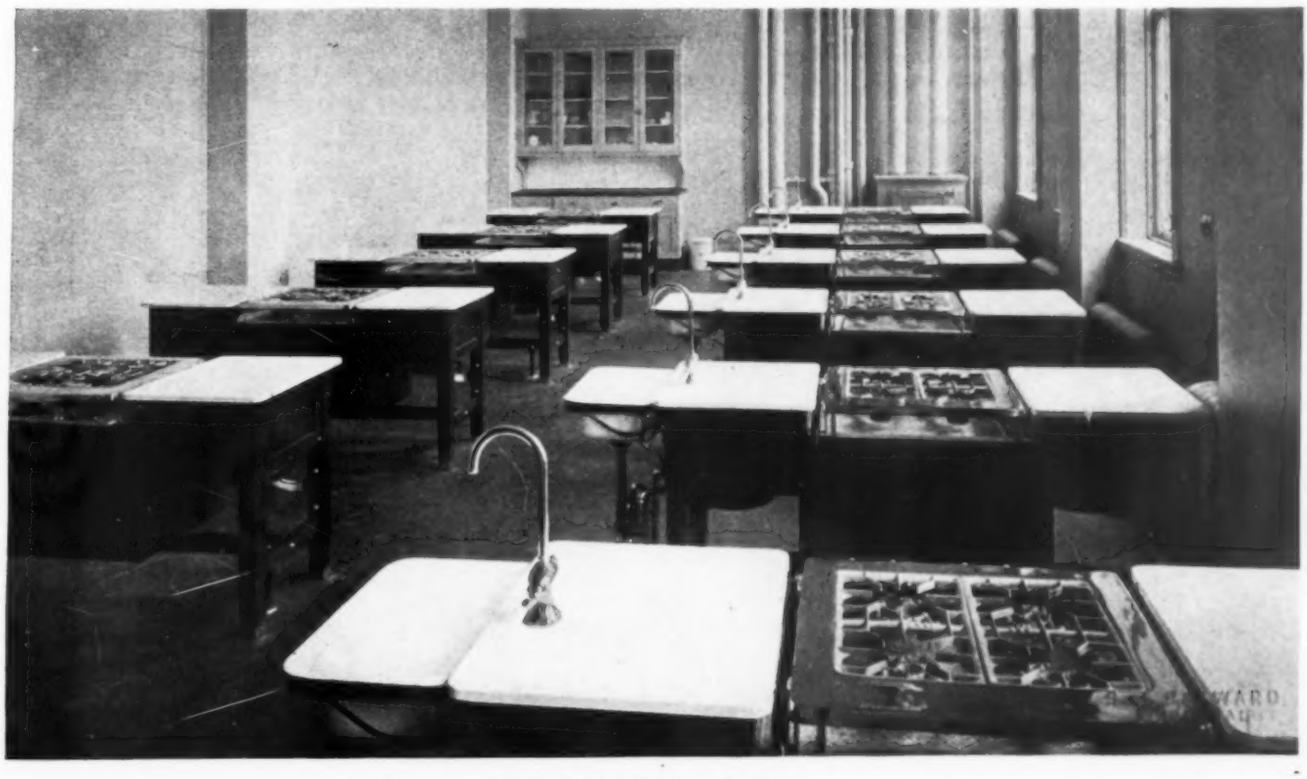
Third floor

View of another of the living rooms

the storing of personal linen of the nurses.

The main hall on the first floor is reached through a vestibule leading from the main entrance. The columns supporting the roof of the main hall as well as those of the vestibule and main corridor are finished in Botticino marble. The floor itself is covered with black and white rubber tiles. The living and reception rooms are spacious and well lighted, the east living room being for undergraduate nurses, the west for the staff nurses. These two rooms have been handsomely furnished by individual members of the board of management. On this floor also are the superintendent of nurses' suite, a fiction library, two smaller reception rooms and a recreation room which is large enough for physical exercises. This room has been so arranged that many of the dances can be held there, and to this end a kitchen connected with it has been added, which facilitates the serving of supper when the nurses may wish to entertain.

Probably the most interesting feature of this new home is the second or training school floor. Here are located three large classrooms, two of which can be thrown into one by means of folding doors; a diet kitchen; a science laboratory; demonstration ward and offices for the instructresses. These rooms are equipped with the modern apparatus for the teaching of nurses; in



A view of the dietetics laboratory

fact, during the meeting of the American College of Surgeons held at Montreal, October 25-29, 1926, visitors were heard to remark that the home seemed to be built around the training school. The remaining six floors are allocated to the nurses for their individual bedrooms.

The third floor is occupied by the heads of departments and staff nurses. On this floor there are seven suites consisting of bedroom, sitting room and bathroom. The remaining rooms have a bathroom between two rooms. Opening off this floor is a terrace with balustraded front and tiled floor, a delightful place in which to sit or take a "breather."

A typical bedroom

The fourth floor is occupied by the remaining staff nurses and undergraduates and the remaining floors by undergraduate nurses, the ninth floor being reserved for night nurses. Each typical floor consists of twenty-three single bedrooms and four double rooms. A kitchenette is on every floor and sitting rooms adjoin these kitchenettes. All the bathrooms have built-in clothes closets, fitted with shelves and a rod for hangers. There is a washbasin in each room and over the washbasin is a small medicine cabinet. At each end of the typical floors are bathrooms. Each bathroom has a shower, two bathtubs, three toilets and a washbasin with hair washing and drying equipment.

Total Cost of Building $700,000

The total cost of this new building will be approximately $700,000. This includes two elevators, tunnel, additional boiler in power house and complete furnishing of the home.

It might be interesting to note that the furnishing of each typical bedroom consists of: one straight Windsor chair; one Windsor rocker; sash curtains and cretonne hangings; one key tag (such as is used in hotels); one bed; one mattress; one bed spring; one bedside table; one writing desk; one chiffonier with mirror; one adjustable lamp; one portable lamp with shade; two electric bulbs; two small wool rugs; one waste paper basket. The cost of this equipment is in the neighborhood of $116 for each room.

The architects for this building were Fetherstonhaugh & McDougall, Montreal, with Dr. S. S. Goldwater, New York, as consulting architect.

CANADIAN SANATORIUMS BECOMING MORE HOSPITALIZED

In a review of the nature of hospitalization in Canada, the *Canadian Medical Association Journal*, in a current issue of the *Journal*, makes the following comment: "There was never any difference in essentials between sanatoriums and general hospitals, and every year brings them closer together in methods and aims. General hospitals are becoming sanatorium-ized in their wider use of such natural advantages as fresh air, sunlight and more prolonged rest; sanatoriums are becoming general-hospital-ized in the broadening and deepening of the scope of their work in diagnosis and treatment. The changes are good for both. They provoke one another usually to love, but, at any rate, to good works.

"A well equipped sanatorium gives diagnosis and treatment in tuberculosis, both pulmonary and non-pulmonary, including the orthopedic care of bone and joint disease. It gives diagnosis and treatment in diseases of bronchi, lungs and pleuræ, both tuberculous and non-tuberculous, including among these the many and varied conditions of septic origin. It finds places sometimes to give a period of rest in bed to a few worn out people or to heart cases who need pretty much the same routine as the sanatorium patients proper. Most sanatoriums receive for diagnosis several hundreds of various cases each year, and likely offer their diagnostic facilities to their neighboring medical men for cases of all types. The sanatorium is not a shack in the woods, nor the mental hospital a bedlam, but both are modern hospitals with the same objectives."

SOLVING SANITARY ENGINEERING PROBLEMS OF TUBERCULOSIS HOSPITALS*

By C. A. Holmquist and Charles R. Cox, Division of Sanitation, New York State Department of Health, Albany, N. Y.

THE most important consideration of an engineering nature pertaining to tuberculosis hospitals is the selection of a suitable site, because the solution of the various other engineering problems, such as water supply and sewage disposal, depends to a considerable extent upon the site. The selection of sites for tuberculosis hospitals should be based upon the consideration of convenience of location, area, topography and climate. In view of the complexity of these considerations, the advice of a doctor, an architect and a sanitary engineer should be obtained before a particular site is selected. This was done in the case of most of the sixty-two tuberculosis hospitals that have been erected in various parts of the State of New York.

It was the tendency formerly to locate tuberculosis hospitals at isolated mountainous points, which were inconvenient not only to the hospital management but also to the patients and their friends. The modern tendency, however, is to select more convenient sites near the principal highways, trunk railroads and sources of supplies. It is frequently advantageous, when feasible, to locate such hospitals upon the outskirts of municipalities, because by so doing the problems of water supply and sewage disposal will be solved in most cases.

Detailed data cannot be given regarding the necessary area for tuberculosis hospital sites as many local problems are involved. It is essential, however, that sufficient area be required to provide isolation for the buildings and to obtain sufficient land for farming purposes. A properly equipped dairy and poultry farm, together with vegetable gardens, should be provided, if possible, so that the hospital authorities will have control of sources of the important foods. It is also essential that the area owned by the hospital authorities include isolated points for the location of nuisance-creating structures, such as incinerators and sewage disposal plants which are detrimental when close to the hospital.

Rather high altitudes for the sites of tuberculosis hospitals were deemed advisable, if not necessary, formerly. Experience has shown, however, that altitude itself has little connection with the cure of tuberculosis other than to provide a suitable climate. It is essential, however, to locate tuberculosis hospitals on sites where the soil is porous and the topography is rolling, thus providing suitable drainage conditions. The exposures for the main buildings should be southerly or southeasterly. High ground and wooded areas to the north of the building will act as a windbreak and will provide recreation facilities for the patients. A small lake or stream greatly adds to the attractiveness of the view from the porches of hospitals, thus this factor should be given due consideration when considering proposed sites, because every effort should be made to provide an attractive setting for the many hours the patients have to spend on these porches. It should be borne in mind, however, that areas of water are likely to create annoyance from mosquitoes, but this can be avoided by the drainage of swamp land, and by the prevention of dense growths of aquatic vegetation which shelter mosquito larvae from their fish enemies.

Tuberculosis hospitals have been located in various climates. Apparently the most successful

Special Problems

MOST of the problems involved in the design, construction and operation of tuberculosis hospitals are specific and are thus understood by experienced hospital authorities. This is not always true, however, in regard to the special problems of a sanitary engineering character, with the result that many hospital authorities are faced with difficulties in securing an adequate supply of water or in disposing of waste. The importance of this fact is recognized in New York State, where it is required by law that sites for all proposed tuberculosis hospitals must be approved by the state department of health and, in the case of county tuberculosis hospitals, that the plans for the buildings and for water supply and sewage disposal must also be approved.

*This is the fifth of a series of articles to appear in succeeding issues of THE MODERN HOSPITAL, dealing with the planning, equipment, organization and operation of tuberculosis sanatoriums and preventoriums. This series is prepared under the direction of Robinson Bosworth, M.D., Rockford Municipal Tuberculosis Sanatorium, Rockford, Ill.

results, however, are obtained in those climates where the prevailing air temperature is cool and where the air is dry and dustless. The temperature should not be too constant, as variable temperatures have a tonic effect upon the patients. Dryness of the air and freedom from dust, together with variable temperatures can be secured at sites having moderate elevations in the temperate zones. There seems to be a prevailing opinion that the climate obtaining at a tuberculosis hospital should not be greatly different from that at the home of the patients.

The beneficial effects of sunlight have long been utilized in the treatment of the tuberculous patient, even before the introduction of systematic heliotherapy as practiced today in many hospitals. Whenever it is contemplated to use this treatment, a careful study of available weather statistics should be made before a site for a tuberculosis hospital is selected. Successful results in heliotherapy are apparently being secured at hospitals that are located at low altitudes quite unlike the original institution at Leysin, Switzerland. These results indicate that even though the sunlight may be more intense at high altitudes, the total amount of light reaching an exposed patient may be sufficient at lower altitudes, especially at points where clear weather may be more prevalent than in mountainous regions. It is thus seen that hospital sites with moderate elevations provide sufficient sunlight to enable heliotherapy to be practiced. This fact is fortunately in accord with other considerations of the desirable altitude of hospital sites.

Adequate Supply of Pure Water

It is hardly necessary to stress the importance of an adequate supply of pure water for tuberculosis hospitals. Tuberculous patients are frequently hypersensitive to the quality of water, so that it is essential that the water supply be physically attractive as well as of a safe sanitary quality. Such water can be obtained from properly located and constructed wells, and by the use of surface supplies and suitable purification plants. The economic problem involved in this matter should be thoroughly considered before a site is finally selected, because it may be impracticable economically to supply the hospital with water at a site that would be suitable from other standpoints.

The large amount of laundry work and cleansing carried out at tuberculosis hospitals makes the water consumption higher than usual. It is well, therefore, to provide a supply capable of delivering from 150 to 200 gallons of water per capita per day.

Water for tuberculosis hospitals should be obtained, if feasible, from municipal systems; otherwise, expensively operated private water supply systems will have to be utilized. Municipal systems, however, frequently are not available, or are not of a satisfactory sanitary quality, in which case ground water supplies should be considered, because when wells are properly located the ground water is usually free from pollution, is clear, and thus needs no purification. This is an extremely important factor, because the operation of water purification plants is expensive and requires trained supervision. Thus the quality of purified water depends to a large extent upon the human element.

What Type of Well?

The type of well utilized will depend upon the character of the material penetrated by the well. Where water-bearing sand or gravel is located near the surface, large wells may be utilized with success. These wells need thorough protection, however, and should be as far as possible from sources of pollution, including polluted streams that may be flowing nearby. The curbing of dug wells should be made watertight for at least ten feet below the surface of the ground and it should be extended at least a foot above the surface of the ground. The surface of the ground should be graded to slope away from the well, and it is advisable to provide a man-proof fence surrounding the area in the immediate vicinity of the well. Watertight covers should be provided, fitted with tight inspection manholes. Dug wells provide considerable storage capacity and thus enable relatively large pumps to be used for short periods, instead of the less economical smaller, deep well pump, which has to be operated at rates equal to or less than the prevailing yield of the wells. The pumps of dug wells should be installed in structures to the side of and preferably below the top of the wells, but not upon the well covers, as is frequently the case.

In many cases driven wells may provide a satisfactory source of supply. These wells consist of strainers attached to the lower end of the well casings, and may be used wherever the strainers can be driven to water-bearing sand or gravel. The use of drilled wells, however, is essential when the water-bearing stratum is located at a considerable depth and where rock or hardpan has to be penetrated by the well to secure water. Both driven and drilled wells are easily protected from superficial pollution by capping the iron casing. The casing of drilled wells should be driven firmly into the upper portion of the impervious stratum encountered when the well is drilled, and a seal should be provided at this point

to prevent the passage of superficial ground water down the outside of the casing into the lower portion of the well. It is necessary, at times, to insert smaller casings into drilled wells to prevent the entrance of water from intermediate water-bearing strata, which may yield polluted water, whereas that from lower depths may be of safe sanitary quality.

Groups of wells should be located with due regard to the direction of flow of ground water, so that each well will draw upon a separate portion of the body of ground water. The wells should be located, however, as closely together as possible, without interfering with the total yield of water, so that the convenient location of central pumping plants, with short suction mains, is made feasible.

The Surface Water Problem

Bodies of surface water such as streams or lakes may have to be used by tuberculosis hospitals as sources of water, on account of the absence of an adequate supply of ground water. Surface water should not be utilized, however, until a careful sanitary survey is made of the watershed of the stream or lakes and knowledge is obtained of the quality of the water throughout a considerable period of time, because the cost and difficulty of purifying surface waters is generally proportional to the degree of pollution. Water purification plants operated by institutions do not usually receive the expert attention given to similar structures owned by the larger municipalities, thus the plants should not be expected to handle the more heavily polluted streams.

Water purification plants suitable for tuberculosis hospitals consist of three specific types, namely, rapid sand filtration plants, slow sand filtration plants and chlorination apparatus. It is usually advisable to chlorinate filtered water so that any slight reduction in the efficiency of the filtration process from whatever cause will be of minor importance, as the final chlorination process will remove those organisms not removed by the filters.

The real efficiency of water purification plants can only be ascertained by suitable laboratory examinations of the water. It is feasible, however, to train non-technical operators to carry out certain routine tests which will enable them to ascertain the quality of the water being produced at any time. Such control is feasible at tuberculosis hospitals where a member of the technical staff can be detailed to have general supervision over the water purification plant and to make occasional analyses of samples of water. This supervision is essential; otherwise, the cost of improperly operated equipment may be largely wasted.

Surface water from unpolluted upland streams and lakes may be practically clear at most times, in which case it may be unnecessary to filter the water before consumption. Chlorination is essential, however, to enable water from such exposed bodies of water to be utilized with safety for potable purposes. The manual control chlorination equipment, which can be adjusted to chlorinate the water passing through pumps, is available for use under conditions most likely to be met with at hospitals. When water flows from elevated lakes, ponds or reservoirs by gravity, however, it would be advisable to utilize automatic chlorination apparatus which will properly proportion the dose of chlorine to the fluctuating flow passing through the distribution system. Both types of apparatus require careful supervision, and the application of chlorine to the water supply should be controlled by the use of the ortho-tolidin or starch-iodid tests. The effectiveness of chlorination depends upon the application of suitable quantities of chlorine to all portions of the water. Any interruption in the chlorination process may be followed at once by the delivery of water of unsatisfactory sanitary quality. It is necessary therefore that chlorination equipment be in duplicate or that duplicate parts are available for the making of immediate repairs.

Value of Sand Filtration Plants

Slow sand filtration plants are effective in removing moderate amounts of suspended matter and bacteria from water. These filters can be operated without the use of coagulants and, therefore, are more easily controlled by non-technical operators than mechanical filtration plants to be described later. Slow sand filters consist of beds of fine sand through which water is allowed to pass at 3,000,000 to 4,000,000 gallons per acre per day. The filtration process is continued until the friction due to the presence of sediment upon the surface of the sand prevents further passage of adequate quantities of water. The clogged bed is then thrown out of use, drained, and the upper surface of the sand is scraped by hand, using ordinary shovels. The scraped bed is then placed in use again and water is permitted to pass through the clean bed in gradually increasing quantities until the maximum capacity is reached. Great care must be exercised in the manipulation of the rate of flow through these filters because the beds may be ruined by the penetration of suspended matter into the sand, due to the operation of a clean bed at excessive rates when the applied water is turbid. These filters have to be covered in northern latitudes to prevent freezing.

Turbid surface waters have to be coagulated

before they can be economically filtered, so that rapid sand filtration plants are utilized in such cases. These consist of chemical dosing equipment, coagulation basins, filters and minor equipment. Because bacteria and suspended matter in the raw water are coagulated by the chemical treatment, the treated water can be filtered through relatively coarse sand at rates of 125,000,000 gallons per acre per day. This rapid rate of filtration leads to the clogging of the filters in short periods of time so it is the practice to wash these filters by forcing filtered water up through the sand in such a manner as to agitate the filter bed and loosen the suspended matter, which is then washed to waste with the water. The efficiency of rapid sand filtration plants depends upon the addition of adequate quantities of chemicals to the water to be filtered and upon the efficient manipulation of the filter beds. Such plants, therefore, require careful supervision and the utilization of laboratory procedure in the control of the process.

Selection of Pumping Equipment

The pumping equipment has to be carefully selected to provide economic operation, suitable capacity and duplicate apparatus to enable repairs to be made without interruption to pumping. The type of pumping plant needed depends, of course, upon the source of water supply and other local conditions. When ground water supplies are utilized, deep well pumps should not be used unless necessary, because such equipment has a relatively low efficiency and is expensive to maintain. It is feasible to utilize various types of suction pumps located in suitable enclosures near the wells, whenever water reaches to within twenty to twenty-five feet of the surface. Suction pumps are superior to deep well pumps as they can be adequately housed, inspected and oiled. The total capacity of the wells should be in excess of the average pump rate, in order that the wells will not be drawn upon too heavily, as the cost of pumping is influenced by increases in the suction heads to an extent that it may be advantageous to increase the number of wells and thereby decrease the suction head.

The average small sized tuberculosis hospital can be adequately served by elevated storage tanks properly located, which will provide the necessary reserve supply of water for fire protection and will permit temporary shutdowns in the pumping plant. The water used for fire protection purposes should be of equal sanitary quality to the potable supply, or separate piping should be utilized to conduct water of inferior quality for fire protection purposes to the various hydrants. No faucets should be connected to the pipes conducting water not safe for drinking, and no cross connections should exist between the potable supply and that of inferior sanitary quality.

Elevated tanks should be screened and covered. Reservoirs, however, for the larger institutions need to be protected from pollution. The storage of purified water in open reservoirs usually leads to the prolific growth of taste and odor producing microörganisms, which usually does not occur in lightproof structures. It is, therefore, advisable to utilize either covered concrete reservoirs located at suitable elevations on convenient hillsides, or covered elevated tanks or standpipes.

Sewage disposal plants for large tuberculosis hospitals should be located preferably at isolated points where sewage can be conducted to the plant by gravity and where the treated effluent can be discharged into drains in porous soil, or into some body of surface water. It is, therefore, essential, when selecting the site for such hospitals, that careful consideration be given to the ultimate disposal of the sewage, because this factor will control to a large extent the degree of treatment necessary and consequently the cost of the installation.

The sewage from small tuberculosis hospitals may be settled in comparatively inexpensive sewage settling tanks, the effluent from which may be conducted to tile drains which distribute the clarified sewage to an area of porous soil. This type of disposal plant is seldom adequate for institutions larger than those accommodating from fifty to one hundred people, and a large isolated area of porous soil is necessary even for the smaller institutions. Nevertheless, the prejudice against the discharge into streams of effluent from sewage treatment works of hospitals is so pronounced that every effort should be made to secure a favorable site for a subsurface disposal of the sewage by seepage. These systems require careful supervision, but the problems are economic and do not pertain to the prevention of the passage of infected sewage into surface waters.

The Sewage Problem and Infection

Little is known of the effect of the treatment of sewage from tuberculosis hospitals upon bacillus tuberculosis which may be present in the sewage. These organisms have been shown to survive at least ten days in the septic solids in tanks, and they are known to be more resistant to disinfectants than the intestinal pathogenic organisms. It would appear, therefore, that even complete sewage treatment may not be effective in preventing the passage of tuberculous bacilli into streams receiving the effluent.

When the treated effluent from sewage disposal plants has to be discharged into relatively small upland streams, not capable of absorbing large quantities of organic matter, the necessary degree of treatment may be sufficiently high to necessitate the use of sewage disposal plants consisting of settling tanks, biological oxidation beds, final sand filters and disinfection with chlorine gas or hypochlorite of lime. The cost of such disposal plants is quite high and the expense of operation is considerable. It, therefore, is essential that complete information be available regarding the use to which the stream receiving the effluent is put at points below the disposal plant. If such streams are used as sources of water supply, it may be more economical to locate the tuberculosis hospital at some other site rather than contemplate the use of elaborate sewage treatment equipment.

Elaborate and expensive sewage treatment works are frequently installed and thereafter neglected. It is essential, therefore, that the operating budget of tuberculosis hospitals include items for the operation of their sewage treatment plants; otherwise, the initial expenditure for the equipment may be largely wasted. This budget should include items for the labor necessary to operate the plant satisfactorily, and one of the technical staff of the institution should visit the treatment works at intervals to supervise in a general way the problems of operation. This is especially true when the final effluent is chlorinated, because chlorination equipment needs careful supervision and control.

The Use of Deodorizers

The efficient operation of sewage treatment works should prevent the production of nuisances due to odors. At times, however, it may be essential to locate such plants comparatively close to the main buildings, in which case careful consideration should be given to the prevention of odors. It is possible to house the various units of sewage treatment works and to provide ventilation equipment to force air through deodorizers. The unsightly appearance of sewage treatment works can be avoided by the use of shrubbery or shade trees surrounding the works.

It is frequently difficult economically to dispose of refuse, especially garbage. Rubbish, consisting of waste paper, boxes, sputum cups and infected handkerchiefs from tuberculosis hospitals, may be burned in small incinerators or at the boiler plants of the institutions. Garbage, however, has to be destroyed in specially constructed high temperature incinerators, unless it is buried promptly under at least twelve inches of earth, or fed to hogs. Where feeding to hogs is practiced, the garbage should be boiled to protect the hogs.

In the space available, few details of the engineering problems in connection with tuberculosis hospitals can be considered, but the discussion indicates the magnitude of the problems and the necessity of obtaining the advice of competent sanitary engineers regarding the design and construction of water supply and waste disposal systems, and regarding many of the details pertaining to the selection of suitable sites for these hospitals.

WHAT TYPE OF HOSPITALS WILL ENGLAND HAVE IN THE FUTURE?

"What of the future?" asks Thomas A. Pole, architect, London, England, in "One Hundred Years of Hospital Planning," in the recent report issued by the voluntary hospitals of Great Britain.

"This is bound up," he says, "with the question of state aid and control, the further advance of science and the limitation of the workable size of a hospital. As regards the first it seems idle to expect one without the other, and to my mind any form of state control of the hospitals would practically mean the end of the present splendid voluntary system, the drying up of the source of private benevolence, the formation of another bureaucracy with further burdens for the taxpayer, and the loss of the honorary services, both as regards treatment and research, rendered by the brilliant medical staffs attached to the hospitals.

"As regards the progress of science, this will, as in the past, have its effect on the planning of the buildings, and the alliance between the architect and the physician will become increasingly necessary.

"As regards the future size of the hospitals, there is something to be said for the view that there is a danger of an institution of more than 500 to 600 beds becoming too unwieldly for proper administration. The tendency of the hospitals in the large towns is to establish branch hospitals on the outskirts of the borough. The time has arrived when such a step seems inevitable; the original hospitals, having covered all their available site, are now hemmed in by surrounding buildings and are without the air and outlook that such institutions should possess. It seems to me that the future will see the original buildings, or such of them as are necessary, left in the center of the city as emergency units, and the real hospitals devoted to the treatment and convalescence of the patients built on the outskirts on ample and open sites free from enroachments for all time."

SPECIAL DIAGNOSTIC SERVICE FOR MIDDLE-CLASS PATIENTS

In order to meet the needs of the middle class, I believe that a special diagnostic service should be installed, one that will afford the middle-class patient the maximum of study at a rate proportionate to income. The Memorial Hospital, Johnstown, Pa., has planned a special diagnostic service at a rate that the middle-class patient can meet. This rate will be in the shape of a lump sum to include board and care and laboratory study for a certain number of days.—Horace B. Anderson, M.D., director of clinical laboratories, Memorial Hospital, Johnstown, Pa.

WHAT MEDICAL EDUCATION EXPECTS OF THE HOSPITAL

By Willard C. Rappleye, M.D., Director of Study, Commission on Medical Education,
New Haven, Conn.

THE preliminary report of the Commission on Medical Education touches upon a number of problems of direct or indirect interest to hospitals, both in relation to medical practice and to medical training. The intimate relationships between teaching hospitals and medical education are, of course, well understood. There is a growing recognition of the closer relationship between non-teaching, community hospitals and medical training in its broad sense. This is true not only in the larger communities, but certain phases of this relationship exist only in the smaller communities, at a distance from medical centers. In the report of the Commission on Medical Education medical training includes both the periods of student and intern training usually thought of in connection with medical education, and the continuation and graduate training of physicians in practice.

The basic course in the medical school and teaching hospital, in the limited period of time devoted to it, can only supply some knowledge of the principles of the sciences that are necessary for an understanding of health and disease and of the application of those principles that are helpful in diagnosis and treatment and in controlling or preventing illness. In addition, the basic course should develop a proper point of view regarding patients and proper habits and methods of study. The basic course is looked upon as primarily concerned with fitting the student to begin the practice of medicine and supplying him with a foundation for the continuing self-education so essential for the physician if he is to function most effectively throughout the years of his professional life.

Responsibility of Medical Profession

Broadly speaking, the medical profession has a responsibility for the adequate preparation of individuals to begin the practice of medicine and in a larger sense to keep the entire profession familiar with and competent to use the best methods of diagnosis, treatment and prevention of disease. A number of factors are operating to change the character of medical practice and to some extent are influencing medical teaching. A few of these factors are the enormous growth of knowledge of disease and of methods of control and prevention; an increasing emphasis upon early diagnosis and treatment; a large expansion of the use of hospital, dispensary, organized home nursing, social service and industrial medicine; and an increasing employment of health officers with their corps of assistants.

The concentration of population in urban centers and the gradual drift away from the rural districts; the growth of rapid communication and transportation, which has considerably extended the radius of medical practice and increased the competition among physicians; the control of many communicable diseases through public health efforts; better conditions of living and work; better care of the teeth, eyes and throat; the more rational feeding of babies and children; the control of milk and water supplies and of sewage disposal; vaccination and immunization all have a definite influence on medical practice and this influence is being felt in medical education. Furthermore, medical knowledge is having an increasing influence on individual and community welfare as the result of our increasing knowledge of the causes, treatment and particularly the methods of early diagnosis and prevention of disabling illness.

The Program of Community Service

Many of these changes that are going on in medical practice have already been reflected in the organization of teaching hospitals and outpatient clinics. Increasing emphasis is being placed upon the important role of the hospital in this large program of community service, and the training of medical practitioners is being influenced to a considerable degree by these changes. It is inevitable that changes that are going on will and already have markedly influenced our conception of the planning, construction and administration of hospitals. This brief paper aims chiefly to emphasize the changing conditions and to call attention to the necessity for having some of these newer features in mind in the planning of hospitals, particularly to make provisions for the probable future development of the community hospital as indicated by the present trend of hospitalization.

The many changes that are now taking place in medical practice have a number of social and economic implications. The development of periodic health examinations, physical inspection of

school children and of industrial employees, the growing use of laboratory methods of diagnosis, the numerous subdivisions of medicine into specialties and the increasing use of hospitals and nursing services, for example, have introduced large economic questions.

Why Costs Have Risen

At the present time there is considerable agitation against the high cost of medical attention, particularly for the large body of population of moderate means who, it is alleged, are now deprived of proper medical attention because of its cost. This high cost applies particularly to obscure illnesses requiring laboratory, hospital, x-ray or other special study; to illnesses of long duration requiring numerous visits by the physician, frequent treatments or costly drugs, and in serious illnesses or accidents requiring hospital care. It is quite obvious that the increasing cost of these various services is not alone due to the rise in cost of all commodities and services. Probably the largest element is the enormous expansion in our ideas of what constitutes adequate medical service and what the public has been educated to regard as necessary. This general question is mentioned to suggest a number of matters that are emphasized in medical practice and that have a distinct bearing upon the hospital problem.

Mention has been made of the importance of keeping physicians familiarized with the best methods of diagnosis and treatment of illness, and to meet this need a number of activities have been developed. The "clinical congress" and "assembly," either in connection with or independent of regular meetings of the state and county medical societies, constitute an effort to keep the practicing physicians in touch with the most recent developments in medical knowledge. Most of these efforts have been chiefly in the nature of papers or discussions, although more recently increasing emphasis has been placed upon clinical demonstrations. The value of these meetings has been partly offset by the large numbers who attend. As a result little or no opportunity is given for personal and individual instruction. They have had great value, however, in keeping practitioners more closely in touch with progress in medicine and with medical teachers, scientists and clinicians.

Other efforts have been made by universities in the development of extension courses of various types. Some of these courses have been developed as graduate courses at the university, but this plan can reach only a relatively small number of physicians. Thus far the program has been used by the physicians largely as a step in specialization. All of these efforts have tended to make clear that the extension and continuation training of physicians, to be most effective and valuable, should be developed through small groups in the community itself. This plan has all the advantages of individual and small group instruction and gives opportunity for practitioners to discuss their own problems. Moreover, it gives them the added convenience of not being required to leave their practice. These efforts are being directed principally toward an emphasis of the problems of the general practitioner and as such have proved helpful. It is quite apparent that the community hospital has a large opportunity in this type of extension and of continuation training, which will inevitably reflect itself in better medical service in the community and in which, therefore, the community has a direct interest. A program of this character calls for some elaboration of our usual conception of the local hospital and gives it an important role in the broad conception of medical training in addition to those of more strictly medical nursing, laboratory and other service functions.

A certain number of medical schools in the country are now utilizing hospitals away from the medical school as a definite part of their program of medical instruction. This is adding a new and important emphasis in the same general direction. The placing of interns in hospitals scattered widely in the community and the gradual development of resident services in these hospitals is opening up a promising avenue for the infiltration of communities with recent medical graduates.

Uneven Distribution of Physicians

One of the large problems before the country is that of the uneven distribution of physicians, particularly in the smaller communities and largely because of the unwillingness of recent graduates to go into smaller communities. It is quite evident that the gradual development of attractive hospital opportunities for further training in the smaller communities will have a certain amount of influence in bringing younger medical men into these communities and will tend to give a better distribution of physicians.

Another point of importance in medical training is that of prevention. Studies made by the Commission on Medical Education have tended to show that over 90 per cent of the problems of the general practitioner are those of individual patients. This means that less than 10 per cent of these problems are those against which organized public health efforts are mainly directed. This has added significance to the role that general practice plays in preventive medicine and

the large opportunity that the hospital, as a facility for practice, has open to it.

The importance of early diagnosis and treatment is being emphasized to medical students in their hospital and clinical training. Much of the work of the clinics and out-patient services for ambulatory patients, well babies, prenatal care and health examinations, and the hospital study of many illnesses in their early stages need only be mentioned to illustrate the trend. This development implies some elaboration of the generally accepted idea of hospitals and shifts a part of the hospital efforts toward early diagnosis and treatment. Such an emphasis must be reflected in the planning and construction as well as administration and organization of the hospital and point to the community hospital as a vital agency in the field of preventive medicine as well as in medical practice in its usual sense.

The importance of the continuation education of general practitioners in the community and the realization of the role that hospitals are to play in preventive medicine indicate that the community hospital of the future will have to provide facilities for these various activities. There is a growing feeling that in many of the smaller communities the local hospital should serve the entire profession of the neighborhood with laboratory, x-ray and special equipment and personnel, all of which the individual physician cannot be expected to provide economically or to utilize most effectively. If this is the case, the local hospital should make provisions for handling a considerable number of ambulatory patients sent in by their physicians for special examinations or possibly for special treatment. This would mean an increase in the proportion of space in the hospital devoted to other than wards and private rooms and such facilities as dressing rooms, waiting rooms, etc. The record system of the hospital would have to be elaborated to include a certain amount of information regarding many patients who are under the direct care of local physicians, and whose hospital records would be a part of the physician's office record.

Extension of Facilities

Obviously, this would require somewhat of an extension of the ordinary hospital record room and might require additional space, files and personnel and possibly a separate room for the staff in which to study the records of the hospital period or examination of their own patients. The activities mentioned would probably be reflected in an increase in the accounting department, which would have to be thought of in planning a hospital conceived along these general lines.

There is a growing tendency of the community to take all accidents and emergencies to the hospital and here again the hospital has to make additional provisions for the proper and prompt care of emergencies of various kinds, particularly for accident room facilities and personnel, and possibly a resident physician. The role of dental defect and infection in matters of health is introducing in the hospital almost an entirely new field of professional service which may become increasingly important as a hospital service. A number of the larger hospitals have already developed dental and oral hygiene as a regular service. The growing emphasis in medical education on matters relating to conditions of the mouth suggests that medical practice will give more attention to these features, particularly in the types of illness most likely to be seen in the hospital.

In carrying out the program of university extension, the local hospitals should provide laboratories, clinic rooms, a small auditorium and other features of this character. The local hospital, as the common meeting ground of the physician, the patient and the community, is the logical place for the development of a local medical teaching center where, as a part of the staff organization, a program of continuation training can be effectively worked out.

"The Larger Field of Usefulness"

Such a program can only add weight and emphasis to the functions of the hospital as the local health center in which patients and the community can expect to find the soundest type of medical practice and toward which they can look for advice in health matters. The planning of hospitals for small communities should take into consideration the larger field of usefulness of the hospital both in relation to community health and medical training.

In the larger communities, ambulance service has been an important feature of hospital work and has made possible the convenient and safe transfer of patients with serious illness and emergencies to the hospital. The ambulance, the automobile, the telephone and good roads have widely extended the radius of medical as well as hospital practice and have in reality made available hospital services in many communities that were formerly served only by a local resident physician. Many of these small communities could hardly have supported a properly conducted hospital. The extended radius of hospital influence and service is merely another feature that has to be considered in the planning of hospitals and is one that has a large emphasis in medical training and the conception of the hospital's usefulness.

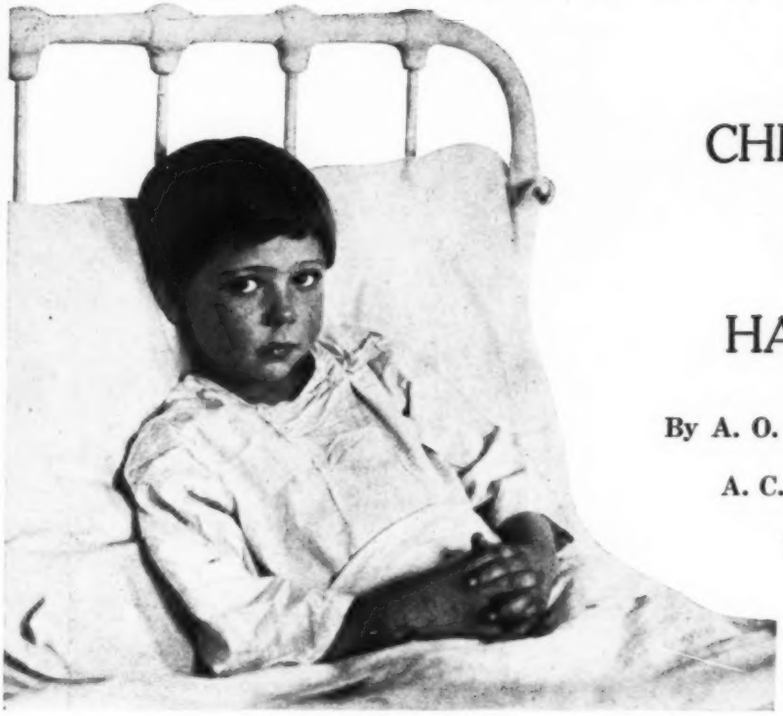


Illustration by courtesy of Western Pennsylvania Hospital, Pittsburgh

HOW THE CHILDREN'S HOSPITAL OF CINCINNATI HAS BEEN PLANNED

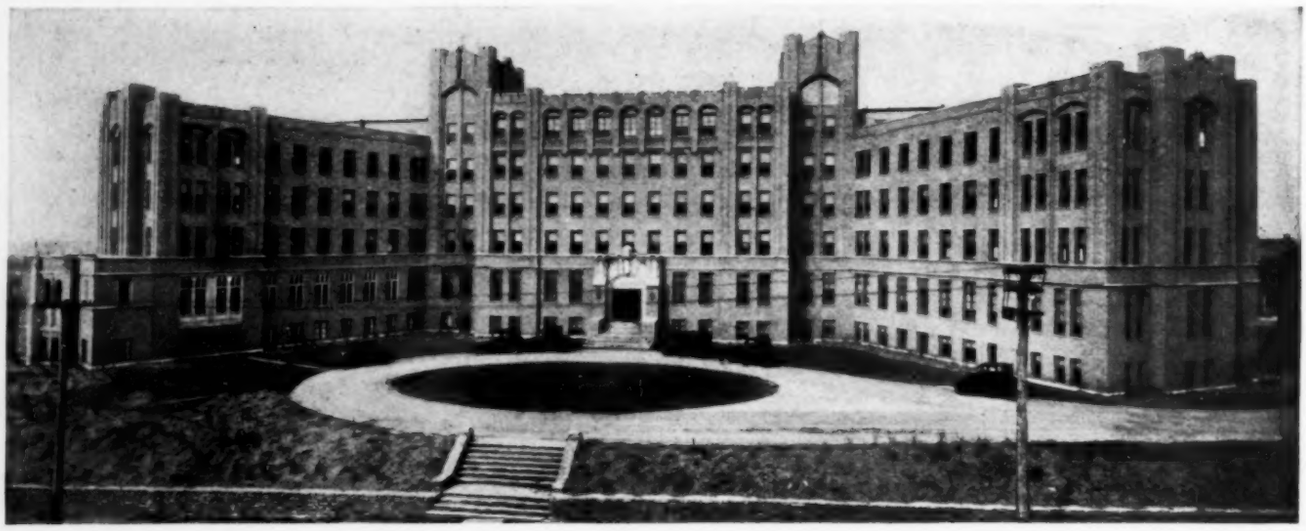
By A. O. Elzner, Elzner & Anderson, Architects, A. C. Bachmeyer, M.D., Consultant, and Elizabeth Pierce, Superintendent, Children's Hospital,

Cincinnati

PLANNING a children's hospital or in fact any hospital involves the consideration of questions that can be properly answered only when there is a clear understanding of all the conditions that are likely to influence the scope of the work the institution intends to do and the demands for such work as well as the methods to be employed. Before any attempt was made to crystallize a program, a thorough and comprehensive survey was made of the entire hospital situation in Cincinnati and vicinity to determine the present needs as well as to make a reasonable allowance for future growth. The development of our program was influenced largely by the result of this survey, the establishment of an affiliation between the hospital and the College of Medicine of the University of Cincinnati and the location of the site, which was available immediately adjoining the grounds of the college and the Cincinnati General Hospital. This arrangement made possible a close cooperation between these institutions and largely increased the facilities for medical attendance, since many of the physicians would be on the staff of both hospitals and would be members of the faculty of the college.

The first discussions relating to this affiliation and to the construction of a new hospital were held in the fall of 1921. The survey and many

Section of cubile ward for older children.



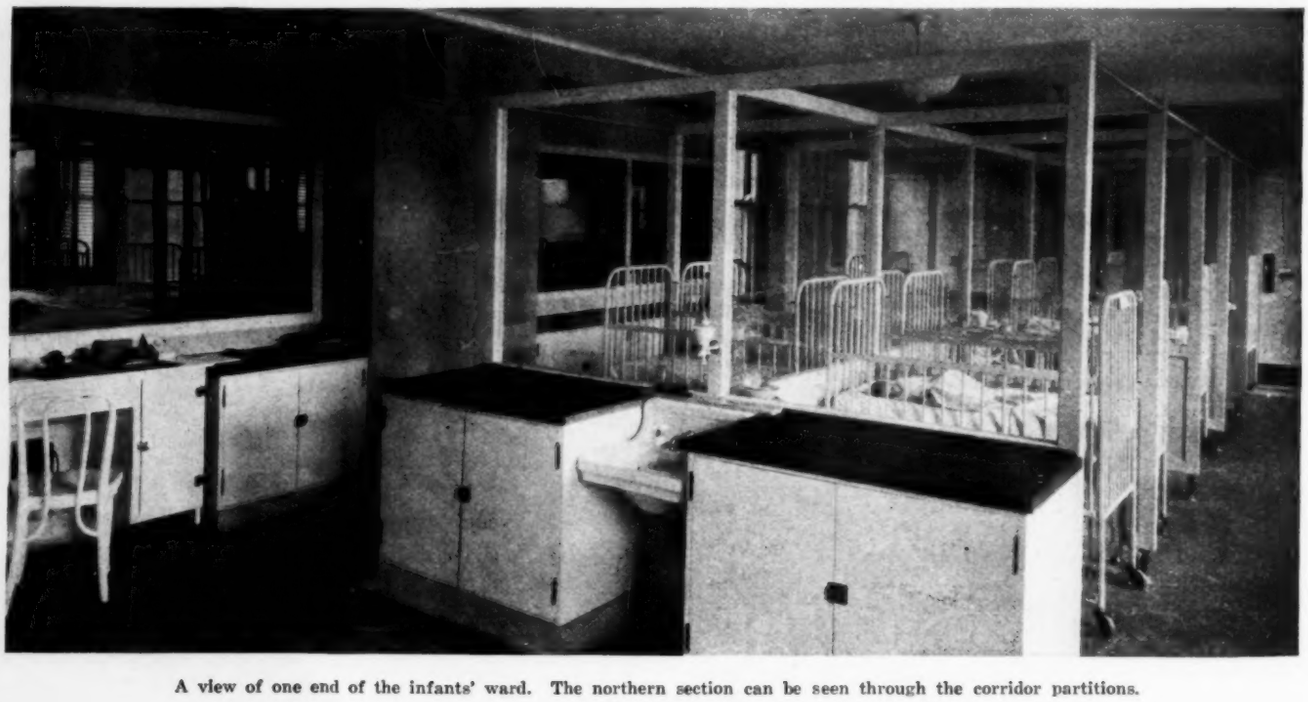
Front view of the new Children's Hospital.

conferences followed before the program was finally formulated. Contracts were let on March 31, 1925, and construction was begun soon after. The hospital, which is under the auspices of the Episcopal Church of the southern diocese of Ohio, was formally dedicated in November and placed in operation early in December, 1926.

There is no factor in hospital planning more important than that of efficiency from the standpoint of conservation of time and effort on the part of those responsible for the nursing care. Any building plan that seeks to provide a maximum of service to the patient must include the most careful study of every detail of the proposed nursing service. An intensive study of the following items preceded the development of floor plans.

1. Ratio of nurses to the patients to be treated.
2. Necessity for accuracy in detail of nursing procedures, not only because the patient is a child but also because he is more susceptible to infection.
3. Responsibility to the mother, who remains with the critically sick child, or the one in a single room.
4. Handling of visitors, so as to make them an asset in health propaganda.
5. Type of nursing to be used and the provisions for it.
6. Teaching, for both nurses and medical students; how much shall be done in classrooms, how much at the bedside.

A children's hospital requires a larger number of nurses than is usual in the adult institution. Through the plan of construction followed and the



A view of one end of the infants' ward. The northern section can be seen through the corridor partitions.

equipment installed, we believe that we have reduced the number necessary to the minimum. The simplest plan of procedure is usually the safest and those factors that contribute to efficiency through conservation of time and energy also aid in securing accuracy of performance.

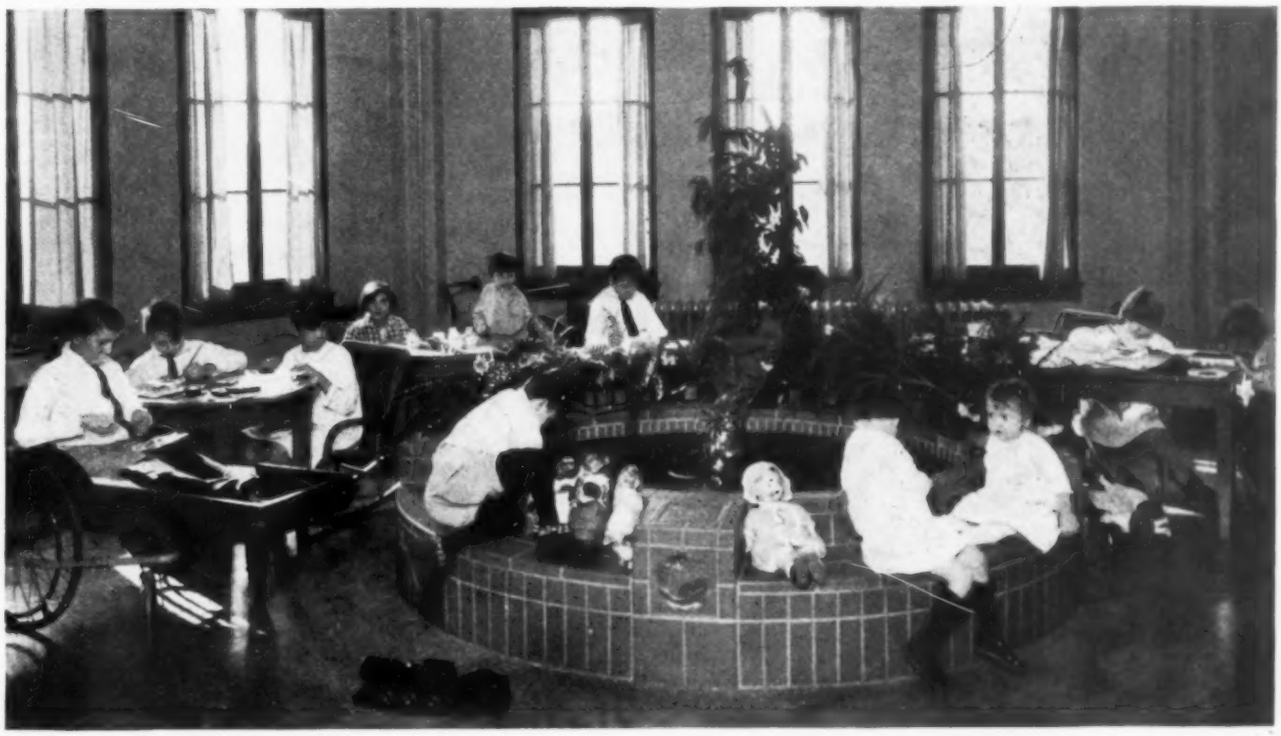
The plot of ground available for construction was in acreage, thus affording perfect freedom in shaping the building according to needs.

The basic consideration of the plan was the determination of the main groups of activities and their proper relation to each other and to the entire project. These groups were divided into their respective component sub-groups and ultimately these were subdivided into their various units.

The main groups were thus determined as administration and service, ward cubicles, and private rooms.

As it is important to keep these groups well separated, the logical step was to arrange the main body of the plan into three district sections, a central section for the administrative group, with wings at one end for the ward cubicles and at the other end for the private rooms, symmetrically arranged, the separation being effected by placing passenger and service elevators and stairs between the central section and each of the two wings. By this arrangement these stairs and elevators are easily reached from any point in the three sections of the building.

For the purpose of affording the maximum of light and air to all rooms, each section is planned of sufficient width to accommodate all rooms about a central corridor without the necessity of projecting them beyond the general wall line farther than one or two feet here and there as required for architectural effect. With the same consideration in view the wings at each end are Y-shaped, on an axis with the corridor of the central section. The angles of the Y and the relation of the wings to the central section were determined only after a careful study of the traverse of the sun in this immediate locality, taking into consideration both daily and seasonal variations in the shadows cast by these wings.



A view of the solarium adjoining the recreation and schoolroom. In the center is the new memorial fountain.

It was felt that all wards should be on complete floors, entirely separated from all departments that did not have to do with the immediate care of the patients. Since the administration naturally belongs on the main floor, it was necessary to plan the building of sufficient size to accommodate all the patients on the second, third and fourth floors. The surgical department was placed in an additional story over the central section of the building, which arrangement incidentally served to enhance the architectural effect.

A suitable location for the power plant and laundry was readily found on account of a deep ravine at the rear of the building. The power plant was therefore placed at the extreme rear end of the wing on the side of the ravine below the

level of the basement, and the laundry was located directly over the boiler room on the basement floor level.

The slope of the ground to the rear proved of such advantage that the driveways were planned to serve four floor levels as follows: (a) The main floor, at the front entrance; (b) the ground floor next below this, at the ambulance entrance in the east wing and at the receiving platform for general supplies, at the rear; (c) the basement floor below this, at the service entrance for bulky supplies, mortuary, laundry and for dumping coal into the top of the coal vault; (d) the boiler room floor below this for entrance into the boiler room and the garage, both of these being at the lowest level.

An essential requirement was a large chapel with adjoining recreation and school room, which could be thrown together for large gatherings of friends of the institution. This feature is placed on the main floor in the southwest wing, the adjoining northwest wing being given over to educational features, such as the assembly hall, nursing practice rooms, library and study and medical director's office.

All rooms for the special treatment of patients, such as hydrotherapy, baking and massage, isolation and quiet rooms, radiographic and main laboratories, are grouped in the central section on the third and fourth floors, directly under the surgical department, thus keeping them well separated from the patients' quarters yet within easy communication with them. These various departments have been so located that an out-patient can be sent to the gymnasium, physiotherapy, x-ray, dental or heliotherapy units without having to pass through any of the in-patient departments. This has been accomplished by grouping them near the eastern end of the central section of the building and serving them with the elevator nearest the admission suite.

Nurses in Separate Building

The nurses will be housed in a separate building, now under construction, on another portion of the grounds north of the hospital. Provision has been made to house a small number of employees in the hospital building. These quarters will be on the ground floor, the men in the central section and the women in the northeast wing.

With the above explanation, a schedule of the various subdivisions and rooms would be as follows:

Sub-basement: boiler-room, with mezzanine for workshops, etc., garage, water softener and pumps.

Basement: laundry, garbage incinerator; employees' lockers and toilet rooms; housekeeper's office; mortuary and autopsy room; soiled linen rooms, at the foot of linen chutes; incinerators for general refuse, with openings on each floor; storerooms; refrigerator machinery and air control apparatus; ventilating fans; transformers.

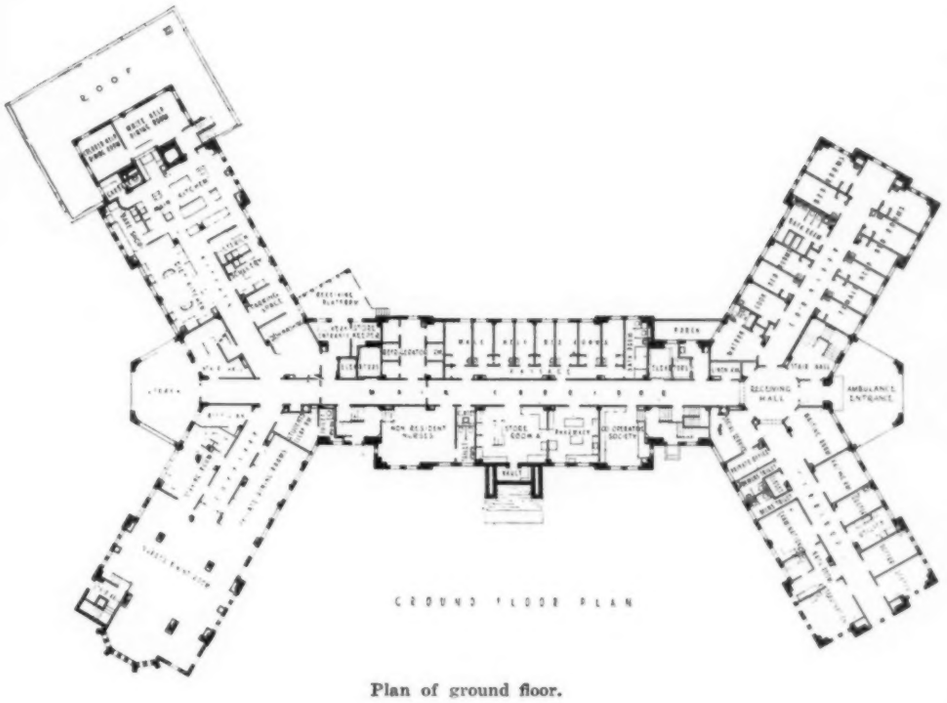
Ground floor: Central section—cooperative society sewing room; non-resident nurses' room; pharmacy and drug storage room; purveyor's office and receiving platform for general supplies; main refrigerators; male employees' quarters. Southeast wing—ambulance entrance and admitting department, waiting rooms, examination rooms, utilities, doctors' and social service offices. Northeast wing—women employees' quarters. Southwest wing—nurses' dining room and cafeteria; resident staff and private dining rooms; dietitian's office. Northwest wing—main kitchen and food laboratory with accessory rooms and central dishwashing room; employees' dining room and cafeteria.

Layout of First Floor

First Floor: Central section—main entrance and rotunda; information with telephone exchange; administration offices; waiting room; coat rooms; board, staff and record rooms. Southeast wing—"Short term" patient rooms, with utility, laboratory and treatment room, service kitchen and solarium. Northeast wing—resident medical staff quarters—Separate suites are provided for men and women. Southwest wing—chapel and recreation room opening into west solarium. Northwest wing—assembly room; nursing practice rooms; medical director's office; library and study and service kitchen. This unit is so equipped and arranged that the new nurse, from an affiliating school, can be instructed with reference to the location of utilities and supplies on the nursing units and thus become acquainted with conditions and methods before entering upon her duties, because utilities and supplies are arranged in uniform manner throughout. These apartments are also utilized by classes of medical students for clinical demonstrations and lectures.

Second Floor: Central section—infants' ward; constant temperature suite; milk laboratory; utilities and ward clinical laboratory.

All beds in the infants' ward are placed in cubicles, with the upper portion glazed, and arranged in groups of four and five to make nursing assignments easy. There is running water in each cubicle and a place for those accessories needed for routine procedures, thus affording better nursing service.



Plan of ground floor.

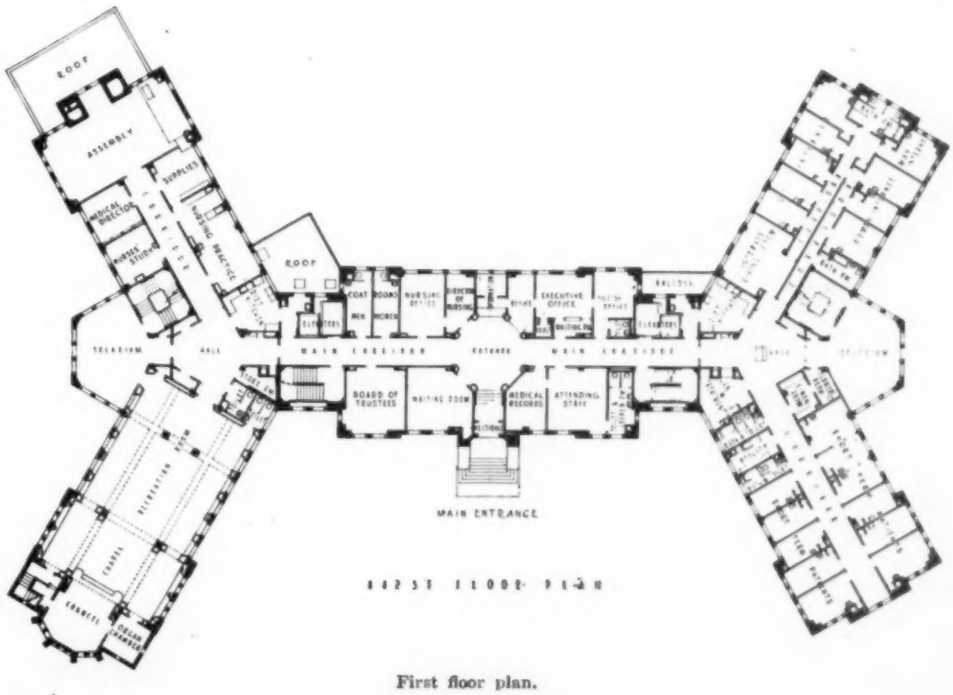
The milk laboratory is located in close relationship to the infants' ward and, contrary to the practice in some institutions, it is under the supervision of the nursing department. Its location in the building is also a central one so that travel with feeding formulas is reduced to a minimum.

Considerable attention was given to the planning of the constant temperature suite, which consists of two rooms, adjoining the infants' ward. The room nearest this ward serves as a "lock" or entrance room and assists in the control of the air conditions in the second room. This second room has been insulated with cork on the ceiling, floor and walls; all doors and sash are double. Air conditioning apparatus controls the temperature, humidity and rate of flow of all air entering the room as well as of all exhaust. This apparatus is automatically regulated by means of thermostats on the heating elements, a humidity control valve on the air washer, which is set by hand according to the condition of the outer air and by fans which determine the rate of air movement through the ducts to the room.

Like other portions of the institution, this room is also divided into cubicles, each of which will hold one bassinet. All facilities for nursing have been provided in the room, so that it is not necessary for the nurse in attendance to leave the suite for any nursing procedure. A large window at the entrance to the infant ward permits of a full view of the room and is utilized to display the patient to its relatives. No one other than the physician and nurse will be admitted to the unit. A recording wet and dry bulb thermometer is part of the room equipment and a reference to a chart, mounted at this point, provides immediate information concerning the degree of temperature and humidity present.

Second floor: West wings—wards, utilities, quiet rooms, laboratory and treatment room, service kitchen, linen room, flower room, solarium with extra stairway for emergency exit.

Each ward is subdivided into three rooms of four, five and six cubicles by means of glass partitions. This is the usual assignment to one nurse. Two lavatories are provided in each ward; the basins are without plugs, so that only running



First floor plan.

water is used. These lavatories are also used for the disposal of waste other than excreta. The bedside table contains the usual individual equipment. Ample closet space has been provided in each ward in cabinets opposite the cubicles so that articles pertaining to each patient can be stored and kept separate.

The one procedure of the "before breakfast toilet" is a good demonstration of what this plan has meant in comfort to the patient and in saving of time and effort to the nurse. The night nurse now wakens her patients and is able to care for the same number in less than an hour and a half, giving the same service that required more than three hours in the old hospital where the usual arrangements existed.

Cubicle Partition Glazed

The upper portion of each cubicle partition above the height of the mattress is glazed so that a clear view of the ward can be had. The side of the wall of the utility room adjacent to the ward is also glazed so that the nurse may keep the ward under observation to the fullest extent. With the same thought in mind, the charting desks are placed in the corridor in view of the ward. Thus the child is made happier by seeing the nurse and the nurse may observe her patient while continuing her work outside the ward. The windows in the wards are so spaced that each cubicle has its own window, thus providing for free circulation of air.

The utility rooms and all other accessory rooms have the same relative location throughout the building, thus minimizing time for instruction in the matter of equipment, which is uniform so far as general care is concerned. The location of these rooms has been made with every thought to their place in the scale of convenience in the care of the patient. The utility room hopper has a hose attachment for washing out soiled linen and diapers. This method is proving to be an excellent feature. The hopper is placed at the same height as the drain board and work table (34 inches). A wall-hung cabinet provides an upper space for such solutions as are used in the utility room, a central drawer for cracked ice and a lower space for specimens or excreta undergoing disinfection. The work table is constructed much as a kitchen cabinet or domestic science table with a definite place for all needed equipment.

The linen room has a central area in which the clothes basket may stand until linen is placed on the shelves. Shelving is erected on one side for a two-days' supply of linen and on the other for blankets and pillows.

The flower room is amply large to care for flowers and a supply of vases. It also serves as a workroom for the instructor in handicraft, who finds the sink just the place for such work as the soaking of reed.

Treatment rooms are provided in connection with each nursing unit so that patients requiring extensive treatments and examinations may be removed from the ward, thus eliminating anxiety and fear on the part of other children. Each of these rooms has a small laboratory bench where routine analyses are made. The central laboratory is thus reserved for the more elaborate procedures and for research, and the resident physician is made responsible for his own routine work. These rooms are equipped with a sterilizing unit for water, utensils and instruments, lavatory, large sink, blanket warmer and built-in utility closet. There is ample room for the usual movable equipment and working space.

Nurses' stations are located at the junctions of the corridors leading into the wings, permitting of supervision from a central point and providing for control of all traffic to and from the division.

Second Floor: East wings—Each wing contains eight private rooms with utility, bath, service kitchen, treatment and laboratory, etc., as at the west end. Night lights are installed in all corridors and rooms not lighted through glazed partitions. These are in small shuttered cabinets countersunk in the wall below the patients' line of vision and are controlled by a silent switch placed just inside the door in the private rooms.

Physiotherapy Department

Third Floor: Central section—Physiotherapy units, consisting of hydrotherapy, baking and massage rooms and gymnasium located on the south side. On the northern side of this section and separated from the central corridor by means of a smaller passage are a number of special quiet rooms, each of which has been treated to soundproof it from the adjoining rooms and from the main hall. These rooms are primarily intended for the care of the highly nervous patients, such as those afflicted with chorea.

Wings: Both east and west wings of this floor are duplicates of those described for the second floor.

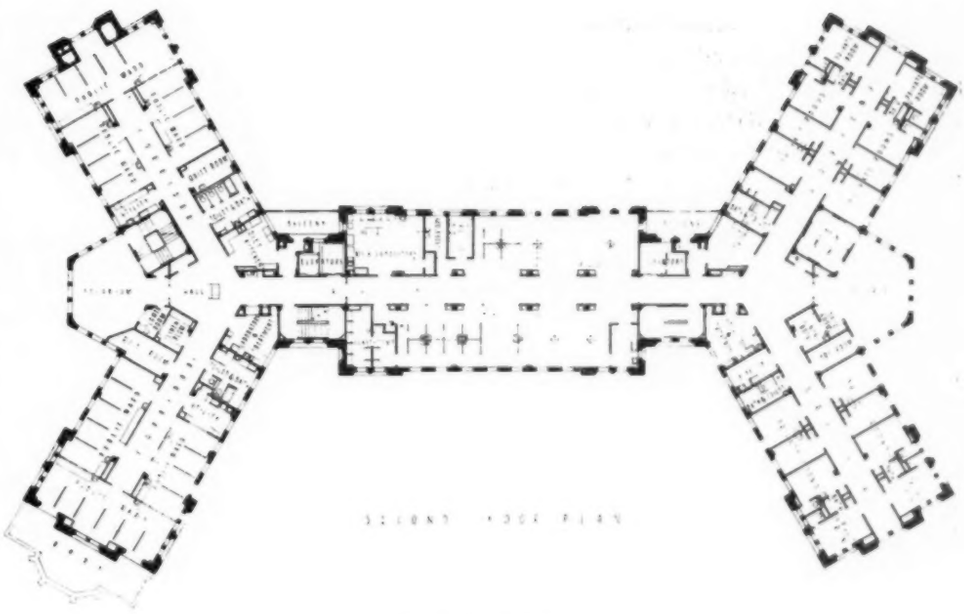
Fourth Floor: Central section—east half. The x-ray department has been placed on the south side. It consists of fluoroscopic, radiographic and treatment, developing and viewing rooms and is equipped with a "power plus" machine which is capable of doing both radiographic and treatment work.

The main laboratory with a small media prepa-

ration room and an additional small room for metabolism and electrocardiographic work is placed on the north side of the building.

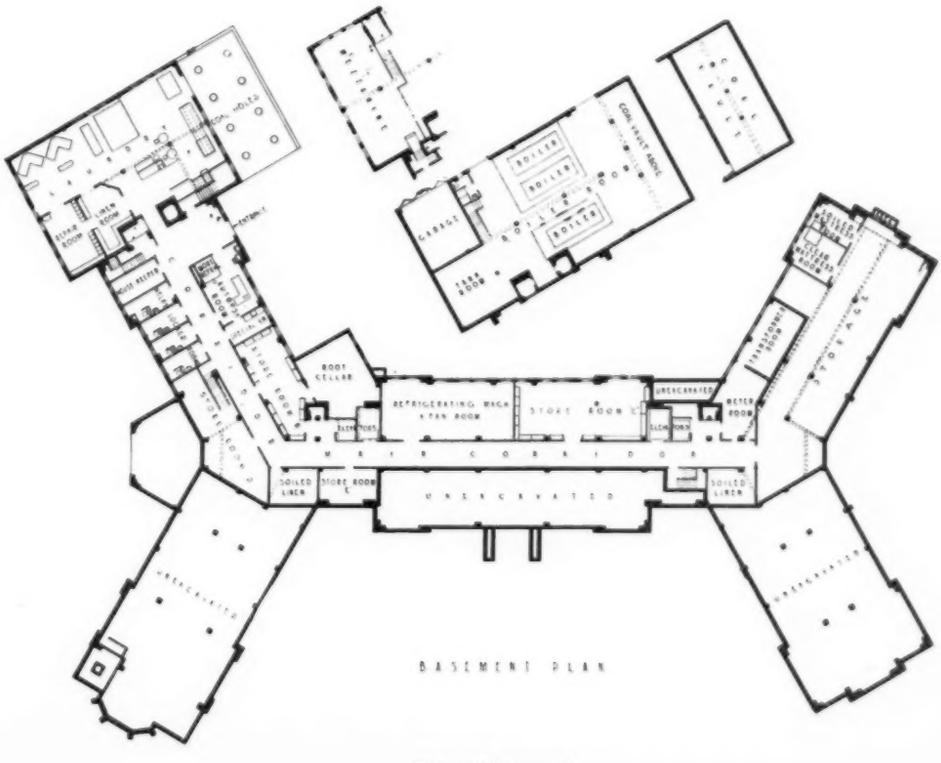
West end: Two suites of isolation rooms occupy both front and rear of the west end of this section. These rooms are intended for the isolation and care of such patients as may develop a communicable disease after admission to the institution.

Wings: The wings on this floor have not been finished. They will provide facilities for future expansion of either ward or private rooms as the need may develop.



Second floor plan.

Fifth Floor: Central section—This entire area is devoted to the surgical department. Five operating rooms, consisting of two for major surgery and one each for dentistry, orthopedic and eye, ear, nose and throat surgery occupy the rear or northern side of the floor. Major surgery and orthopedic rooms have large windows and skylights. The eye, ear, nose and throat room is provided with shades, so that the surgeons can exclude direct light when they so desire. The dental room is equipped with two operating chairs and a laboratory bench for prosthetic work. Two scrub-up stations and sterilizing rooms are interposed between the operating rooms. The southern or front side is occupied by utility units consisting of nurses' work room, sterilization room with two large autoclaves for dressings, which discharge into the sterile dressing room, two anesthetizing rooms, supply closets, surgical supervisor's office, nurses' dressing room and surgeons' lounge and dressing room.



Plan of basement

Wings: The wings leading off of this floor are developed as roof gardens. They are surrounded with parapet walls for protection of the patients against wind currents and to prevent falling. Enclosed wards occupy space at the junction of the wings. These are supplied with utility rooms and service kitchens. These units have been provided with the idea that they will be used in connection with the heliotherapy work.

The Gothic style was chosen for the architectural design of the building and a light, grayish buff colored, wire-cut brick was used for the

exterior facing. This combination lends itself most readily to the accomplishment of economy as well as to the achievement of quiet dignity and character. The architectural effect is enhanced by the fact that the central section rises one story higher than the wings and further by the pent house towers which rise to a still greater height at each end of the central section, thus producing a satisfactory balance.

The design depends for its effect primarily upon broad masses of plain surfaces broken by vertical offsets producing dividing shadows at appropriate points. There is but little elaborate detail, this being centered about the main entrance and at the chancel end of the chapel, as well as a little by the use of special shaped brick in the arches of the upper stories.

In the interior, the only places treated in a decorative manner are the main entrance, the chapel and adjoining recreation hall. These are designed also in the Gothic style, with rather elaborate detail in wood tracery and wrought iron grilles and lighting fixtures; the chapel and recreation room being further decorated by the application of pure color design to the beams and mouldings on the ceilings as well as to the woodwork in the chancel. The windows in both of these rooms are of stained glass designed to embody popular nursery characters.

The private rooms are furnished like well appointed home bedrooms, thus removing as much as possible the hospital atmosphere.

The waiting room at the patients' entrance has one of the walls decorated with a mural painting extending over practically the entire area and depicting in gay and lively fashion well-known circus characters and animals, calculated to attract the attention of the children and dispel any tendency to gloom over the prospect before them.

Homelike Atmosphere Throughout

With a similar purpose in view, pictures have been hung throughout the building in all wards and public rooms as well as in the administrative offices. The system of furnishings and decorations therefore imparts a homelike atmosphere throughout, which is generally conceded to have a high therapeutic value, particularly in a hospital devoted to the care and treatment of children.

Considerable attention has been paid to the question of noise. In order to minimize the production of unnecessary noises and at the same time obtain a durable and attractive flooring we have used rubber tile in large quantities. The ceilings in treatment rooms, utility rooms and in certain locations in the corridors have been treated with sound absorbing felt. Attention to these details has given us a quiet institution and has also added to its attractiveness.

The main kitchen with its accessory units was carefully planned and is proving to be a practical and satisfactory department. Every worker has his or her place and there is no confusion or lost effort even in the busiest moments of the day. The workers seem to accomplish their tasks with ease and a minimum of effort, which is conducive to their happiness and consequently productive of the greatest efficiency.

Food Service—an Attractive Feature

The food service is one of the features that has attracted favorable comment. The food carts pass from their parking space to the serving table in the main kitchen for the general food supply, then to the serving table of the food laboratory, where they pick up the special diets, and then to the service elevators and to the respective nursing units. Food for the wards is placed in containers in bulk, the containers then being placed in the wells of the carts. Food for the private rooms is placed on plates and these are inserted in plate racks which also fit into the wells of the carts.

Upon entering the institution, all patients, both ward and private cases, are taken to the admitting suite. Here a member of the resident staff makes his initial examination and secures the medical history from parent or relative. The examining rooms have been completely equipped for this purpose, including such laboratory apparatus as is needed for routine procedures.

The admission suite is also furnished with all necessary nursing utilities so that the nurse finds her supplies ready at hand and the technique of admission is easily carried out. The social service offices are also located in connection with this department so that the workers can at once establish contact with the relatives of the patient. There are also a number of offices for the use of the attending medical staff as consultation rooms where they may see their private patients. These offices are also used as clinic rooms by appointment and for the follow-up work.

Having had the operation and administration of the hospital in mind from the start and during the entire time of construction, there was no difficulty encountered in organizing the personnel and occupying the building even though the workmen were not entirely out of the way. After two months of operation the ease with which the work is conducted is apparent. The interrelation of the various departments is highly satisfactory and only a minimum of personnel is needed for efficient operation.

A STUDY OF HOSPITAL OPERATING COSTS*

AT A recent convention of the American Hospital Association, the presiding officer called attention to the fact that the hospitals of North America are among the billion dollar enterprises. Annually the hospitals of this country are spending a sum equal to about one-third of the expenditures of the United States Government. No wonder that public opinion is becoming more and more insistent in its demand for an adequate accounting of the stupendous sum expended for the care of the sick.

Some states, like Pennsylvania and Ohio and, to a certain extent, New York, demand of the hospitals annual statements about the sources of income and the main items of expense. In some cities the private hospitals are required to submit financial reports to the municipal authorities before they can claim assistance for the care of indigent patients. Wherever community chests exist, all the beneficiaries, including hospitals, must present more or less detailed budgets; and all the governmental hospitals, whether federal, state, city or county, must submit their budgets to the appropriate fiscal bodies.

Data Difficult to Compare

No two official bodies request the financial facts in precisely the same way. Neither has there been general agreement as to the exact meaning of terms. As a result, the available data can seldom be compared with profit. Although there is some truth in the old French adage, *"La comparaison n' a pas de raison,"* yet within certain limitations financial comparisons are indubitably valuable and helpful. The more alike the accounting systems are, the more, of course, are the comparisons valid as between institutions of more or less similar scope and size. The uniformity of accounting methods, moreover, makes possible comparisons of functional subdivisions and thereby contributes toward better administrative control. It is imperative to establish norms for the various types of hospital expenditure. Such norms would serve the purpose of the mariner's chart to the busy hospital superintendent. He would guide his course in each department of the hospital by watching the extent of the deviations of his expenses from the norm. Exigencies of his particular situation may require a course to be followed that is away from the trend of the norm curve, but the norm will still remain the compass by which he may orient himself. At the present time no gauging instrument of any precision exists for the guidance of the administrators in the vast sea of hospital expenditures, except the experience of former years.

It was with a view of finding out how flexible the prevailing accounting methods are for comparative purposes that a group of hospitals scattered in the industrial centers throughout the country was requested by THE MODERN HOSPITAL to give some pertinent facts about their income and expense. Only thirty-three institutions were able to fill out the schedules fully or in part. Three hospitals sent their financial statements, but stated that the schedule as drawn up did not apply to their institution. The tabulations published here apply, therefore, to thirty-three hospitals. One of the hospitals is unidentified; for this reason the geographical distribution and bed capacity of the total group refer to but thirty-two hospitals. The hospitals are located in sixteen states, as follows:

California, 1; Connecticut, 2; District of Columbia, 1; Illinois, 1; Louisiana, 1; Maryland, 2; Massachusetts, 2; Michigan, 3; Minnesota, 2; Missouri, 1; New Jersey, 4; New York, 3 (all outside of New York City); Ohio, 3; Oregon, 1; Pennsylvania, 1; Wisconsin, 1.

According to the last report of the American Medical Association, the combined bed capacity of these thirty-two hospitals was 13,238 and the annual average number of beds in use was 11,813, or an average utilization of 74 per cent.

The total annual expenditures of the thirty-three hospitals in 1925 was $16,923,115.81, or $1,278.35 per available bed and $1,724.56 per bed in actual use.

Classification of Hospitals

Seven of the thirty-three hospitals are municipal, the remainder are private, none of them proprietary. Seven are teaching hospitals and all but three maintain nurse training schools.

Table I gives the bed capacity of each of the hospitals, the average annual rate of utilization, the total hospital earnings of the year, as well as the average earnings per bed in use, the total current income, the total operating expenses for the year and the average cost of maintenance per bed in use.

A glance at the table shows the differences in the operating expenses per bed in use and the differences in the hospital earnings per bed in use. A much better basis of comparison between hospitals would have been the per capita per diem cost, but unfortunately this was not available.

*This study was prepared by the editorial board of THE MODERN HOSPITAL and E. H. Lewinski-Corwin, Ph.D., Director, Hospital Information and Service Bureau of the United Hospital Fund of New York, New York.

TABLE I

Designation of Hospital	Bed Capacity		Total Hospital Earnings		Total Current Income	Ratio of Earnings to Total Current Income	Operating Expenses		Difference between Earnings and Expenditures per bed in use.	
	Total	Average number in use	Total	Per bed in use	Total		Total	Per bed in use	In favor of hospital	Against hospital
1.†	570	447	$ 62,582.99	$.....	$ 819,703.99	7.6%	$ 757,121.00	$1,693.55	$.....	$.....
2.†	650	560	3,155.06	.....	687,806.21	.5	684,622.15	1,222.53	.....	.....
3.†	2,000	1,616	51,175.45	.....	1,661,577.59	3.0	1,661,577.59	1,028.20	.....	.....
4.§	678	434	752,318.75	1,733.46	842,057.21	89.3	760,950.33	1,753.41	.....	18.96
5.§	150	79	75,069.52	950.24	204,952.88	36.6	182,819.04	1,048.31	.....	98.07
6.§	125	105	203,066.05	1,933.96	248,687.30	81.6	197,390.72	1,879.91	54.05	.....
7.	116	89	115,074.60	1,292.97	180,693.01	63.1	187,930.89	2,111.58	.....	818.61
8.	115	72	162,184.45	2,251.86	189,932.70	85.0	197,989.24	2,749.85	.....	497.99
9.	46	34	32,312.79	950.37	50,245.73	64.3	57,046.48	1,677.83	.....	727.46
10.	619	441	625,939.46	1,419.36	755,888.81	82.8	741,870.25	1,682.26	.....	262.90
11.	223	199	328,132.09	1,648.90	673,319.37	48.7	523,498.82	2,630.64	.....	981.74
12.	742	542	981,455.39	1,810.80	1,303,398.33	75.3	1,165,833.99	2,150.98	.....	340.18
13.†	371	303	"insignificant"	.....	568,230.00	...	521,257.12	1,720.32	.....	.....
14.§	265	225	342,997.65	1,524.43	500,030.63	68.5	496,663.37	2,207.39	.....	682.96
15.	150	126	212,045.43	1,682.90	212,701.83	99.6	225,380.89	1,788.73	.....	105.83
16.†	360	255	18,039.17	.....	99,159.67	10.7	643,873.90	1,813.72	.....	.....
17.	329	272	586,712.41	2,157.03	610,564.47	96.1	493,540.68	1,814.48	342.55	.....
18.§	220	197	269,138.27	1,366.18	272,853.97	98.6	251,837.45	1,430.64	.....	64.46
19.	270	206	375,678.66	1,823.68	520,020.38	72.2	518,248.94	2,491.98	.....	668.30
20.	185	120	208,575.10	1,738.11	208,878.97	99.8	191,522.93	1,596.02	142.09	.....
21.§	191	127	289,742.15	2,281.43	365,164.70	78.1	325,366.07	2,561.93	.....	280.50
22.	500	384	624,087.66	1,625.22	647,088.83	96.4	631,352.86	1,644.14	.....	18.92
23.	233	85	298,504.35	3,511.81	305,698.89	97.6	242,218.51	2,849.63	662.18	.....
24.§	213	154	384,614.55	2,497.49	460,183.22	83.6	405,022.67	2,630.00	.....	132.51
25.†	673	393	2,178.90	.....	620,121.03*	.4	620,121.03	1,577.91	.....	.....
26.†	700	481	.....	.....	650,056.68*	...	650,456.68	1,352.30	.....	.....
27.	400	323	565,038.84	1,749.34	586,914.81	97.9	542,213.70	1,678.69	70.65	.....
28.§	218	199	382,786.77	1,923.55	527,191.84	72.6	492,121.70	2,472.97	.....	549.42
29.	320	107	272,078.93	2,542.79	329,774.94	82.5	250,524.41	1,341.34	201.45	.....
30.§	366	208	433,436.17	2,083.87	506,188.18	85.6	487,978.67	2,346.05	.....	262.18
31.†	1,072	667	10,768.85	.....	933,798.85	1.1	931,088.21	1,395.93	.....	.....
32.	314	263	384,457.31	1,461.81	397,266.46	96.8	382,722.24	1,455.21	6.60	.....
33.	not stated	not stated	461,407.31	.....	503,135.22	92.1	475,923.28	.....	.....	.....

† Municipal Hospital. * No figures given on schedule; total "expenses" taken as amount of "current income." § Community Chest Hospital.

Many of the hospitals omitted to give this information, and for a large number of hospitals the total number of days' care was not reported. For this reason it was impossible to calculate the per capita per diem costs for all institutions.

Aside from administrative efficiency, there are several reasons for the differences in the average earnings per bed and the average cost of maintenance. The size of the hospital is, of course, an element. The varying proportion of private and semi-private to ward beds in each of the hospitals studied is an important factor. The differences in the rates charged by the hospitals for the several types of accommodations, as well as the difference in the prices of commodities in the various parts of the country are likewise contributory factors in the situation.

As the earnings of the municipal hospitals are either very small or practically none, depending on the policy of each municipality, no attempt was made to estimate the hospital earnings per bed in these hospitals. The discussion on this point, therefore, refers solely to the private hospitals.

The average annual earnings per bed in use in the private hospitals varied from $950.24, the lowest, to $3,511.81, the highest. In all of these figures the cost of special nursing is included, for many hospitals did not report this figure separately and it was thought better to include this item in all than to exclude it in some instances and leave it in in others. It will be observed that in nine of the twenty-five private hospitals, the earnings constitute over 90 per cent of the total income; in several instances the earnings of this group of hospitals come close toward constituting the entire current income. With the exception of two, all the hospitals in this category have a high utilization of their bed capacity, running over 80 per cent and in two instances to almost 90 per cent. As the schedule used in eliciting information did not go beyond aggregate figures and did not call for rates charged or the proportion of private to ward beds, it is impossible to analyze the several factors involved.

Seven of the twenty-five private hospitals showed an earning ratio of over 80 per cent, four an earning ratio of over 70 per cent, one 48.7 per cent and another 36.6. This is summarized in the form of a table:

TABLE II

The Ratio of Earnings to Total Hospital Income in 25 Private Hospitals

Ratio of earnings	Number of hospitals
Over 90 per cent	9
From 81 to 90 per cent	7
From 71 to 80 per cent	4
From 61 to 70 per cent	3
Less than 60 per cent	2

TABLE III
Hospital Operating Expenses

Designation of Hos.	Administration	Per cent	Professional Care of Patients	Per cent	Departmental Expenses	Per cent	General House and Property	Per cent	Total
1.†	$ 47,052.00	6.2	$227,913.00	30.1	$364,580.00	48.2	$117,576.00	15.5	$ 757,121.00
2.†	34,128.44	5.0	233,939.42	34.2	280,815.89	41.0	135,738.40	19.8	684,622.15
3.†	22,831.83	1.4	582,090.21	35.0	692,023.33	41.6	364,632.22	22.0	1,661,577.59
4.§	49,172.35	6.5	163,064.63	21.4	312,870.18	41.1	235,873.17	31.0	760,980.33
5.§	15,743.18	8.6	60,813.29	33.3	74,721.80	40.9	31,540.77	17.2	182,819.04
6.§	16,128.03	8.2	39,535.55	20.0	107,125.23	54.3	34,601.91	17.5	197,390.72
7.	.....	...	.....	...	.....	...	.....	...	‡187,930.89
8.	94,464.02	47.7	25,567.10	13.0	54,497.47	27.5	23,460.65	11.8	197,989.24
9.	1,602.04	2.8	30,380.04	53.2	16,515.25	29.0	8,549.15	15.0	57,046.48
10.	28,281.56	3.8	178,574.15	24.1	320,122.58	43.1	214,891.96	29.0	741,870.25
11.	52,990.68	10.1	182,637.69	34.9	198,549.77	38.0	89,320.68	17.0	523,498.82
12.	103,094.79	8.9	333,353.97	28.6	569,440.81	48.8	159,944.42	13.7	1,165,833.99
13.†	78,188.57	15.0	153,512.67	29.4	210,540.02	40.4	79,015.86	15.2	521,257.12
14.§	46,905.17	9.4	106,614.53	21.5	261,851.34	52.7	81,292.33	16.4	496,663.37
15.	96,897.24	43.0	38,881.03	17.3	15,863.71	7.0	73,738.91	32.7	225,380.89
16.†	457,363.57	71.0	68,804.50	10.7	106,793.59	16.6	10,912.24	1.7	643,873.90
17.	43,981.33	8.8	81,023.91	16.4	284,323.06	57.6	84,212.38	17.0	493,540.68
18.§	42,312.06	15.0	82,414.91	29.2	114,126.47	40.5	42,984.01	15.3	281,837.45
19.	39,573.15	7.7	202,148.64	39.4	188,529.27	36.7	82,997.88	16.2	513,248.94
20.	8,768.95	4.6	58,023.33	30.3	84,615.90	44.2	40,114.75	20.9	191,522.93
21.§	23,679.65	7.3	140,189.04	43.1	115,362.74	35.4	46,134.64	14.2	325,366.07
22.	36,826.31	5.8	194,696.96	30.8	297,166.44	47.1	102,663.15	16.3	631,352.86
23.	28,008.42	11.6	85,051.73	35.1	99,711.36	41.2	29,447.00	12.1	242,218.51
24.§	52,764.02	13.0	94,190.55	23.3	189,041.08	46.7	69,027.02	17.0	405,022.67
25.†	.....	...	.....	...	.....	...	.....	...	‡620,121.03
26.†	28,356.30	4.4	211,301.68	32.5	247,926.73	38.1	162,871.97	25.0	650,456.68
27.	.....	...	.....	...	.....	...	.....	...	‡542,213.70
28.§	44,533.18	9.1	183,716.16	37.3	187,005.91	38.0	76,866.45	15.6	492,121.70
29.	17,520.10	7.0	73,222.77	29.2	82,112.32	32.8	77,669.22	31.0	250,524.41
30.§	47,786.86	9.8	167,034.56	34.2	199,550.86	40.9	73,606.39	15.0	487,978.67
31.†	48,208.66	5.1	791,164.65	84.9	*51,714.90	5.5	*40,000.00	4.3	*931,088.21
32.	48,850.42	12.8	97,102.73	25.4	149,078.68	38.9	87,690.41	22.9	382,722.24
33.	34,763.67	7.3	151,652.74	31.9	215,763.74	45.3	73,743.13	15.5	475,923.28

* Arbitrary Subdivision. † Municipal Hospital. ‡ Not Classified. § Community Chest Hospital.

From this it can readily be seen that the tendency of the hospitals has been toward making the patients bear the major part of hospital costs. As we are not here discussing general hospital policies, it is sufficient to emphasize the significance of this fact and point out that it affords one more reason for the public's interest in efficient hospital management.

As will be seen from the last two columns of Table I the average earnings per bed in use are actually higher than the corresponding costs per bed in use in eight of the twenty-five hospitals. This surplus varies from several dollars to $662.18 per bed. Seventeen of the hospitals show an annual loss per bed in use which varies from $18.92 to as much as $818.61. All these figures should be "taken with a grain of salt," first because they are artificial averages, and second, because a close analysis of the accounts of many hospitals indicates how often a book surplus becomes a deficit. They are of service, however, for general orientation purposes, as they constitute the only available guiding posts. It is hard to draw any definite deductions from these figures, but on the whole the hospitals that show a surplus in their earning capacity over their costs are not the best known hospitals in the group, and none of them is a teaching hospital. Moreover, it may be of interest to note that some of the hospitals that show a surplus in their earning capacity per bed show also considerable revenues from other sources.

Of the eight municipal hospitals, only two reported any appreciable income from earnings; in one instance it amounted to 7.6 per cent and in another 10.7 per cent of the total of their budget.

It is customary to compare hospital expenses on the basis of the per capita per diem costs. For the reason given above, it is impossible to present such comparisons here. As a substitute, the operating annual costs per bed in use were employed. These show considerable variations, from $1,028.20 to $2,849.63. It is of interest that among the private hospitals there were several with a cost lower than that of some of the municipal hospitals. The hospitals associated with teaching and research showed the highest operating expenses. These are well known for the high quality of service given. There are, however, one or two in the high cost group whose work is not generally known to be of similarly high grade caliber.

The questionnaire called for the items of annual expenditure, first by the main operating or departmental subdivisions, such as administration, professional care of patients, operation of plant, in which were included the steward's and dietary department, the laundry, housekeeping, the power house, ambulance and nurses' home, general house and property expenses, the out-patient department, research and teaching, and, finally, the corporation expenses. Then, the information was requested on a requisition or teleological basis. The expense was apportioned for the following items: food, fuel and light, medical and surgical supplies and equipment, household furnishings and supplies, repairs, office expenses, and, finally, salaries and wages. Not in every instance was the information supplied in this twofold manner, indicating a lack of analytic cost accounting.

Although efficient management may perhaps be found in hospitals having no proper system of cost accounting, it is impossible to gauge it objectively, and on the basis of fairly wide opportunity of observation, I feel justified in venturing the assertion, that, in general, no efficient management is possible without an adequate cost accounting system. The excuse that cost accounting involves expense that a "charitable" institution should consider twice before incurring, is a poor one. It is all the more important to administer "charitable" institutions efficiently, when two-thirds of the funds expended constitute receipts from patients, and many patients feel that they are made to pay too much. For effective chronological comparisons, the consumption accounts should be expressed not only in terms of dollars, but in quantities used. Such was the recommendation of King Edwards' Hospital Fund of London two years ago. Budgeting is likewise a useful control contrivance and should have a wider application in hospitals than it has hitherto had.

TABLE IV

Utilization of Bed Capacity and the Relative Cost of Professional Care

Percentages of total maintenance cost chargeable to "professional care of patients" in hospitals where the bed capacity is utilized to the extent of:

1. Less than 70 per cent	2. From 70 to 85 per cent	3. Over 85 per cent
33.3	30.1	34.2
13.0	35.1	34.9
43.1	21.4	10.7
35.1	20.0	29.2
32.5	53.2	30.3
29.2	24.1	37.3
34.2	28.6	
84.9	29.4	
	21.5	
	17.3	
	39.4	
	30.8	
	23.3	
	25.4	
	16.4	

In Table III is presented the hospital operating expense, subdivided into four main divisions, administration, professional care of patients, departmental expenses and general house and property. It will be noticed that for several of the hospitals this subdivision of operating expense could not be obtained. The analysis of each column is made separately. The percentage that the reported figures for the cost of administration bears to the total operating expense of the hospital proper ranges from 1.4 to 71.0. On the face of it, it is absurd to think that either of these extremes is correct. In other words, the term "administration" in spite of instructions given, means entirely different things to the several hospital bookkeepers. It is hardly feasible that the salaries of the superintendent and the other officers of the hospital, as well as clerks, together with the expenses for stationery, telephone, postage, printing and the getting out of the annual report, could amount to much more in any one hospital than the average shown for the entire group, which is about 11 per cent of the total maintenance expense. These expenses compare fairly well with the average for administration as reported for the hospitals comprising the mem-

TABLE V

Classification of Maintenance Expenses

Name of Hospital	Salaries and Wages	%	Food, Ice and Water	%	Fuel, Light and Power	%	Medical and Surgical Supplies and Equipment (Renewals)	%	Office Expenses	%
1.†	$ 474,646.00	64.0	$ 125,500.00	16.9	$ 58,775.00	7.9	$ 25,000.00	3.4	$ 11,500.00	1.5
2.†	Not specified according to this classification.									
3.†	762,564.78	45.9	414,840.97	25.0	140,594.70	8.5	99,729.28	6.0	10,533.00	.6
4.‡	272,433.48	33.4	172,406.56	21.2	52,396.85	6.4	103,535.74	12.7	6,375.54	.7
5.‡	Not specified according to this classification.									
6.‡	38,448.07	18.4	45,248.14	21.7	19,241.85	9.2	10,427.91	5.0	4,901.57	2.3
7.	75,419.14	40.1	48,193.20	25.7	16,436.63	8.8	18,569.05	9.9	4,723.50	2.5
8.	84,348.93	45.6	46,982.17	25.4	16,001.13	8.7	17,901.88	9.7	7,219.01	3.9
9.	Not specified according to this classification.									
10.	273,198.71	36.1	187,716.04	24.8	59,037.12	7.8	67,755.56	8.9	9,350.44	1.2
11.	Not specified according to this classification.									
12.	559,219.04	45.8	302,177.97	24.7	74,807.78	6.1	124,648.84	10.2	34,428.83	2.8
13.†	173,980.45	33.4	186,448.34	35.8	49,194.68	9.4	21,157.78	4.1	Not reported	
14.‡	262,542.28	54.3	101,882.57	21.1	30,572.55	6.3	31,965.87	6.6	11,402.78	2.4
15.	91,140.75	42.0	49,168.23	22.6	18,298.51	8.4	14,067.75	6.5	2,960.90	1.4
16.†	444,363.50	69.0	78,656.11	12.2	1,875.76	.3	68,804.50	10.7	5,458.42	.8
17.	Not specified according to this classification.									
18.‡	Not specified according to this classification.									
19.	Not specified according to this classification.									
20.	85,436.00	46.4	41,189.36	22.4	13,463.22	7.3	17,695.60	9.6	4,156.79	2.3
21.‡	Not specified according to this classification.									
22.	291,615.28	45.8	174,190.28	27.3	20,061.46	3.2	66,564.12	10.4	10,986.84	1.7
23.	115,313.41	46.8	58,832.60	23.8	16,435.20	6.6	32,002.71	13.0	10,380.39	4.2
24.**	Not specified according to this classification.									
25.†	Not specified according to this classification.									
26.†	352,524.74	54.2	132,585.54	20.4	36,762.72	5.6	35,028.39	5.4	16,875.75	2.6
27.	Not specified according to this classification.									
28.**	Not specified according to this classification.									
29.	115,703.77	45.8	65,924.06	26.1	22,797.61	9.0	8,245.00	3.3	1,275.04	.5
30.**	252,648.03	47.7	102,024.84	19.3	29,259.53	5.5	51,644.96	9.8	29,165.65	5.5
31.†	462,735.02	55.7	244,691.52	29.4	63,460.94	7.6	45,735.08	3.5	2,036.48	.3
32.	136,432.73	39.7	85,207.25	24.8	23,215.24	6.7	31,755.00	9.2	5,115.19	1.5
33.	206,418.91	42.0	127,093.41	25.9	33,797.95	6.9	36,548.97	7.4	10,442.72	2.1
Total (1)	$5,531,133.02	46.4	$2,790,959.16	23.4	$796,486.53	6.7	$928,783.93	8.0	$199,288.84	1.7

† Municipal Hospital. ‡Community Chest Hospital. (1) Total applies to only 21 hospitals.

bership of the United Hospital Fund of New York, but the figure is two and one-half points higher than the percentage assigned to cost of administration in the analysis of the costs of the state-aided hospitals of Pennsylvania. In a report recently published by the department of welfare of that state, and prepared by Emil Frankel, the percentage chargeable to administration was 7.3. In the light of this norm, about one-third of the hospitals included in the present study show a faulty distribution of their costs chargeable to administration.

No doubt, many hospitals do not consider it worth while to apportion the salaries and wages among the different departments. When the salaries and wages of the entire personnel are charged to "administration," naturally the proportion becomes very large. In some hospitals where a subdivision is attempted the method of apportionment varies considerably. Some, for example, charge the expense of the record rooms to administration, others to professional care of patients. Some hospitals charge the salaries of medical stenographers to administration. This diversity of practice is accountable in a measure for the variations found in the proportions charged to this item. In some hospitals it is customary to add to the administration costs the so-called "corporation expenses," while in other hospitals this account is carried separately. The ratio of the personnel to patients is a useful auxiliary gauge, but is not available for the purposes of this study.

Of the eight municipal hospitals, two do not allocate their expenses on a functional basis and four show a very low proportion chargeable to administration. One of them is five points above the average for all the hospitals, and the two extremes mentioned above, the one very low and the one very high, are found in this group. It is likewise of significance, that of the nine hospitals associated with community chests, seven fall below the norm and two are above it. The oscillations in either direction are very moderate.

TABLE VI

Comparative Table of the Distribution of Maintenance Expenditures for 40 General Hospitals in New York City and 21 Hospitals Scattered Throughout the United States

	New York Hospitals	Hospitals Comprised in the Present Study
Salaries and wages	46.4	46.4
Food, ice and water	23.3	23.4
Fuel, light and power	6.7	6.7
Medical and surgical supplies	7.9	8.0
Medical and surgical equipment	1.2	
Office expenses including printing	1.9	1.7
House furnishing supplies	4.3	5.0
Insurance and taxes	1.1	1.2
Ordinary repairs	3.2	3.5
Other expenditures	4.0	4.1

In the proportion of the total expenses charged to "professional care of patients," there is less deviation than in the other three main subdivisions. On the average about one-third of the total hospital expense goes for the professional care of patients and the extreme variations are 10.7 per cent and 53.2 per cent. The highest proportionate amount for professional care is found

TABLE V

Classification of Maintenance Expenses

%	Household Furnishings and Supplies	%	Insurance and Taxes	%	Ordinary Repairs	%	Other Maintenance Expenses	%	Total	Per cent %
1.5	$ 30,500.00	4.1	$ 1,000.00	.1	$ 15,500.00	2.1	.....	..	$ 742,421.00	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
.6	117,460.13	7.1	.....	..	60,443.00	3.6	$ 55,411.73	3.3	1,661,577.59	100.
.7	57,662.98	7.1	88,441.47	10.9	51,363.97	6.3	10,414.73	1.3	815,031.32	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
2.3	36,448.74	17.5	3,375.54	1.6	11,550.73	5.5	39,191.99	18.8	208,834.54	100.
2.5	11,730.26	6.2	2,286.97	1.2	2,854.05	1.5	7,718.09	4.1	187,930.89	100.
1.9	3,437.54	1.9	2,015.77	1.1	3,556.74	1.9	3,401.09	1.8	184,864.26	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
1.2	27,001.65	3.6	5,442.52	.7	71,841.81	9.5	55,542.85	7.3	756,886.70	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
2.8	67,334.28	5.5	.....	..	38,132.23	3.1	21,358.09	1.8	1,222,107.06	100.
	19,840.65	3.8	.....	..	.....	..	70,635.22	13.5	521,257.12	100.
2.4	23,703.90	4.9	3,102.48	.6	16,813.74	3.5	1,463.08	.3	483,449.25	100.
1.4	16,329.94	7.5	521.64	.2	1,947.68	.9	22,743.96	10.5	217,179.36	100.
.8	24,428.44	3.8	.....	..	6,636.48	1.0	13,650.69	2.1	643,873.90	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
..	.....	..	.....	..	.....	..	.....	..	.....	..
..	.....	..	.....	..	.....	..	.....	..	.....	..
2.3	12,536.27	6.8	1,042.20	.6	7,681.55	4.2	797.78	.4	183,998.87	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
1.7	28,738.97	4.5	5,024.39	.8	36,923.79	5.8	3,060.76	.5	637,165.89	100.
4.2	7,293.57	3.0	3,554.00	1.4	2,185.26	.9	628.19	.3	246,625.33	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
..	.....	..	.....	..	.....	..	.....	..	.....	..
2.6	25,844.71	4.0	10,671.27	**1.6	3,509.12	.5	37,209.46	5.7	651,011.70	100.
..	.....	..	.....	..	.....	..	.....	..	.....	..
..	.....	..	.....	..	.....	..	.....	..	.....	..
.5	34,148.28	13.5	1,597.84	.6	.....	..	3,053.60	1.2	252,745.20	100.
5.5	26,408.68	5.	4,744.56	.9	17,006.49	3.2	16,415.05	3.1	529,317.79	100.
.3	10,200.86	1.2	.....	..	17,254.34	2.1	84,973.97	10.2	931,088.21	100.
1.5	17,474.72	5.1	2,694.90	.8	25,584.35	7.4	16,457.26	4.8	343,936.64	100.
2.1	29,303.88	6.	1,975.24	.4	25,188.02	5.1	20,680.77	4.2	491,449.87	100.
1.7	$598,524.57	5.0	$137,490.79	1.2	$415,973.35	3.5	$484,808.36	4.1	$11,912,752.49	100.

* Includes interest on mortgage. ** Contractual services.

TABLE VII-A
Current Income—I

Name of Hospital	Hospital Patients: Private	%	Semi-Private	%	Earnings or Receipts From: Ward	%	Public Funds: Public Charges	%	Ambulance Account	%
1.†	$ 14,192.00	1.7	$.....	...	$ 19,798.00	2.4	$757,121.00	95.4	$.....	$...
2.†	.....	...	.....	...	.....	...	684,622.15	100.0	.....	...
3.†	.....	...	.....	...	.....	...	1,610,412.14	97.0	.....	...
4.‡	503,263.05	66.8	.....	...	105,281.11	13.9	56,250.00	7.4	750.00	.09
5.‡	44,513.47	59.2	.....	...	24,573.25	32.7	.....	...	.....	...
6.‡	66,848.14	32.9	59,994.19	29.5	23,519.15	11.2	38,666.24	19.0	.....	...
7.	105,633.60*	91.7	.....	...	9,442.00	8.2	.....	...	.....	...
8.	55,766.50	34.3	35,250.50	21.7	14,782.11	9.1	11,418.00	3.5	5,800.00	1.7
9.	.....	...	.....	...	.....	...	.....	...	.....	...
10.	.....	...	.....	...	.....	...	.....	...	.....	...
11.	125,355.09*	38.2	.....	...	199,753.44	60.8	.....	...	.....	...
12.	511,707.23*	52.1	15,854.24*	1.6	183,246.14*	18.6	.....	...	.....	...
13.†	.....	...	.....	...	.....	...	568,230.00	100.0	.....	...
14.‡	.....	...	.....	...	313,137.67*	91.2	27,589.83	8.0	2,000.00	.6
15.	92,891.00	43.8	.....	...	45,969.51	21.6	68,394.50	32.2	.....	...
16.†	.....	...	.....	...	14,634.85	14.6	81,120.50	71.7	.....	...
17.	358,772.03	61.1	59,644.85	10.1	151,482.15	26.3	.....	...	.....	...
18.‡	.....	...	.....	...	265,811.99*	98.7	.....	...	2,969.00	1.1
19.	115,567.21*	30.7	80,919.18*	21.5	87,154.07*	23.1	.....	...	.....	...
20.	.....	...	.....	...	200,861.16*	96.3	.....	...	.....	...
21.‡	.....	...	.....	...	235,873.40	81.4	39,240.25	13.5	.....	...
22.	552,520.32*	88.5	3,040.90	.5	.....	...	60,000.00	9.6	.....	...
23.	181,719.08	60.6	.....	...	77,898.44*	26.0	25,089.78	8.4	.....	...
24.‡	181,384.72	47.1	.....	...	79,302.99	25.8	.....	...	.....	...
25.†	.....	...	.....	...	.....	...	.....	...	.....	...
26.†	.....	...	.....	...	.....	...	650,056.68	100.	.....	...
27.	63,026.48*	11.1	.....	...	97,563.00	17.3	403,631.97	71.4	.....	...
28.‡	188,657.73	49.2	.....	...	194,129.04	50.7	.....	...	.....	...
29.	186,443.91	68.5	.....	...	43,711.02	16.0	24,828.50	9.1	.....	...
30.‡	256,980.27	59.3	118,158.10	27.2	.....	...	13,000.00	3.0	.....	...
31.†	.....	...	2,025.20	.2	.....	...	923,030.00	98.8	.....	...
32.	.....	...	.....	...	381,964.66*	99.3	.....	...	.....	...
33.	161,759.22	35.0	55,031.76	11.9	54,917.64	11.9	44,721.43	9.7	3,644.49	.8

‡ Community Chest.

in a small private hospital of less than fifty beds, while the lowest is found in a midwestern municipal hospital, running to almost 100 per cent bed capacity.

An attempt was made to ascertain if there be any correlation between the relative amount spent for professional care and the percentage of utilization of the bed capacity. From the tabulation given in Table IV it will be seen that there exists no such correlation between the two.

The evidently inaccurate apportionment of charges to administration has of necessity affected the proportions assigned to "departmental expenses" and to "general house and property cost." The expenses for food, kitchen, housekeeping, laundry, linen, ambulance, etc., reported by the hospitals in this study amounted in the aggregate to 39.4 per cent of the total maintenance expenses; and the costs for fuel, light, equipment renewals and ordinary repairs and other items associated with the care and operation of the plant, amounted to 17.9 per cent of the total ex-

TABLE VII-B
Current Income—II

Designation of Hos.	Dispensary and Emergency: Fees from Patients	Drugs & Appliances	Compensation Cases and Others	Total Receipts from Dispensary and Emergency Cases	%	Contributions, etc.	Community Chest
1.†	$ 4,389.00	$ 2,483.55	$19,789.00	$26,670.50	3.2	.....	.....
2.†	.....	.....	.....	.....	..	.....	.....
3. †	.....	.....	.....	.....	..	.....	.....
4.**	.....	29,997.30	13,040.75	43,038.05	5.1	5,903.89	8,912.01
5.**	4,621.85	382.70	.....	4,004.55	1.9	37,041.01	60,000.00
6.**	1,441.34	.....	.....	1,441.34	.5	3,139.16	18,742.00
7.	*	*	*	2,092.00	1.1	*	*
8.	.....	.....	1,119.42	1,119.42	.5	24,049.79	.....
9.	1,818.50	.....	.....	1,818.50	3.6	864.73	.....
10.	.....	.....	.....	.....	..	.....	.....
11.	*	*	*	37,617.52*	5.5	.....	.....
12.	*	*	*	62,193.77*	4.8	5,000.00	.....
13.†	.....	.....	.....	.....	..	.....	.....
14.**	7,698.73	1,615.80	876.65	10,191.18	2.0	500.00	126,629.58
15.	.....	.....	.....	.....	..	.....	.....
16.†	.....	.....	.....	.....	..	.....	.....
17.	.....	.....	.....	.....	..	.....	.....
18.**	.....	.....	.....	.....	..	173.76	.....
19.	.....	.....	.....	.....	..	9,826.12	65,749.99
20.	.....	.....	.....	.....	..	295.00	.....
21.**	*	*	*	28,089.98*	7.6	7,339.44	25,000.00
22.	*	*	*	590.40*	.09	.....	.....
23.	889.65	.....	.....	889.65	.29	4,616.04	.....
24.**	6,163.71	.....	.....	6,163.71	1.3	24,531.58	1,100.00
25.†	2,178.90*	.....	.....	.....	..	.....	.....
26.†	.....	.....	.....	.....	..	.....	.....
27.	1,654.71	.....	.....	1,654.71	.3	.....	.....
28.**	17,258.91	.....	.....	17,258.91	3.2	1,881.16	125,265.00
29.	11,195.50*	.....	987.20	12,182.70	3.6	.....	.....
30.**	29,736.65	.....	.....	29,736.65	5.8	9,288.00	30,305.00
31.†	.....	.....	.....	.....	..	.....	.....
32.	.....	.....	.....	.....	..	4,409.15	.....
33.	.....	.....	.....	.....	..	4,630.00	.....

† Municipal Hospital.
** Community Chest Hospitals.

TABLE VII-A
Current Income—I

Miscellaneous Nurse Earnings and Board	%	Ambulance Fees & Visitor's Board	%	Material Sold Account and Mics.	%	Total Miscellaneous Receipts	%	Total Hospital Receipts	Remarks
$.....	$...	$.....	$...	$ 1,922.49	.2	$ 1,922.49	.2	$793,033.49	† Municipal Hospital
.....	...	.....	...	.....	...	.....	...	684,622.15	† Municipal Hospital
.....	...	.....	...	1,734.84	.1	1,734.84	.1	1,661,577.59	† Municipal Hospital
54,091.43	7.1	2,394.32	3.1	30,288.84	4.0	86,774.59	11.5	752,318.75	.....
3,593.85	4.7	1,560.50	2.0	828.45	1.1	5,982.80	7.9	75,069.52	° Arbitrary sub-division
9,272.75	4.5	3,301.40	1.6	1,463.18	.7	14,037.33	6.9	203,066.05	.....
.....	...	.....	...	.....	...	.....	...	115,074.60	° Includes semi-private
9,768.25	6.0	.....	...	29,349.09	18.1	39,117.34	24.1	162,134.45	.....
.....	...	.....	...	.....	...	.....	...	32,312.79	.....
.....	...	.....	...	.....	...	.....	...	625,939.46	.....
.....	...	3,023.56	.9	.....	...	3,023.56	.9	328,132.09	* Includes semi-private
59,280.30	6.0	1,213.15	.1	210,154.33	21.4	270,647.78	27.5	981,455.39	* Arbitrary sub-division
.....	...	.....	...	.....	...	.....	...	568,230.00	† Municipal Hospital
.....	...	.....	...	270.15	.07	270.15	.07	342,997.65	° Includes all patients
.....	...	1,154.30	.5	3,636.12	1.7	4,790.42	2.2	212,045.43	.....
.....	...	.....	...	3,404.32	3.6	3,404.32	2.6	99,159.67	† Municipal Hospital
.....	...	8,716.78	1.5	5,106.60	.9	13,823.38	2.4	586,712.41	° Includes all patients
.....	...	.....	...	357.28	.13	357.28	.13	269,138.27	° Includes all patients
15,229.75	4.0	313.00	.08	76,495.45	20.3	92,038.20	24.4	375,678.66	* Arbitrary sub-division of operating room expenses
4,172.82	2.0	1,166.00	.6	2,375.12	1.1	7,713.94	3.6	208,575.10	° Includes all patients
13,285.50	4.6	.....	...	1,343.00	.5	14,628.50	5.0	289,742.15	.....
.....	...	.....	...	8,526.44	1.4	8,526.44	1.4	624,087.66	° Classification not clear
11,653.86	3.9	.....	...	2,143.19	.7	13,797.05	4.6	298,504.35	° Arbitrary sub-division
22,713.35	5.9	4,456.40	1.2	96,757.09	25.1	123,926.84	32.2	384,614.55	.....
.....	...	.....	...	.....	...	.....	...	.....	† Municipal Hospital
.....	...	.....	...	.....	...	.....	...	650,056.68	† Municipal Hospital
817.39	.1	.....	...	.....	...	817.39	.1	565,038.84	* Includes semi-private
.....	...	.....	...	.....	...	.....	...	382,786.77	.....
17,095.50	6.3	.....	...	.....	...	17,095.50	6.3	272,078.93	.....
32,955.50	7.6	12,342.30	2.8	.....	...	45,297.80	10.4	433,436.17	.....
.....	...	.....	...	8,743.65	.9	8,743.65	.9	933,798.85	† Municipal Hospital
.....	...	.....	...	2,492.65	.6	2,492.65	.6	384,457.31	* Includes priv. & semi-priv.
27,002.49	5.8	.....	...	114,330.80	24.7	141,332.27	30.6	461,407.81	.....

pense. The general averages for each group of these items approximate the relative proportions reported by the fifty-six hospitals of the United Hospital Fund of New York. The proportions of these costs likewise, correspond fairly closely to those ascertained in the above mentioned Pennsylvania study. It is to be regretted that the data collected by the Bureau of Hospitals of the Ohio State Department of Health are not being published. All tabulations of available data contribute toward establishing administrative guideposts.

The classification of hospital expenses into constitutent elements was evidently a more difficult task than the subdivision of expenses by departments, for twelve of the thirty-three hospitals failed to give their costs in this way. This classification does not permit of as much accounting liberty as the departmental classification, for the categories are clearcut and definite. The comparisons are, therefore, more serviceable. It is to be regretted that they could not be calculated on a per patient per day basis.

TABLE VII-B
Current Income—II

Voluntary Gifts for Current Expenses

Total Voluntary Gifts	%	Income from Investments	%	Total Current Income	Remarks
.....	...	.....	...	$ 819,703.99	† Municipal Hospital
26.00	.0003	.....	...	687,806.21	† Municipal Hospital
.....	...	.....	...	1,661,577.59	† Municipal Hospital
14,815.90	1.7	31,884.51	3.7	842,057.21	.....
97,041.01	47.3	27,837.80	13.5	204,952.88	.....
21,881.16	8.7	22,298.75	8.9	248,687.30	.....
73,526.41*	40.6	.....	...	180,693.01	* Total Receipts—No sub-division given
24,049.79	12.6	2,549.04	1.3	189,932.70	.....
864.73	1.7	15,249.71	30.3	50,245.73	.....
.....	...	129,949.35	17.1	755,888.81	.....
.....	...	307,569.75	45.6	673,319.37	° Total Receipts—No sub-division given
5,000.00	.4	254,749.17	19.5	1,303,398.33	* Total Receipts—No sub-division given
.....	...	.....	...	.....	† Municipal Hospital
127,129.58	25.4	19,712.22	3.9	500,030.63	.....
.....	...	656.40	.3	212,701.83	.....
.....	...	.....	...	.....	† Municipal Hospital
.....	...	23,842.06	3.8	610,564.47	.....
173.76	.06	3,541.94	1.2	272,853.97	.....
75,576.11	14.5	68,765.61	13.2	520,020.38	.....
295.00	.13	2,008.87	.9	210,878.97	.....
32,339.44	8.8	14,993.13	4.1	365,164.70	° Total Receipts—No sub-totals given
495.00	.08	19,619.67	3.0	644,792.73	° Total Receipts—No sub-totals given
4,616.04	1.5	1,688.85	.5	305,698.89	.....
25,631.58	5.5	43,773.38	9.5	460,183.22	.....
.....	...	.....	...	.....	† Municipal Hospital—°Did not report income
.....	...	.....	...	.....	† Municipal Hospital
.....	...	20,221.26	3.5	586,914.81	.....
127,146.16	23.1	.....	...	527,191.84	.....
31,311.53	9.4	4,680.82	.9	329,744.94	°Receipts from private out-patient treatments
39,593.00	7.8	3,422.36	.7	506,188.18	.....
.....	...	.....	...	.....	† Municipal Hospital
4,409.15	.9	8,400.00	2.1	397,266.46	.....
.....		37,097.51	7.3	503,135.32	.....

It is of interest in studying this subdivision of the expenses as shown in Table V, to note that the highest proportionate amount paid in salaries and wages occurs in the municipal hospitals. Of these one has a very high utilization of almost 100 per cent, while the other hospitals are close to the average for the whole group in their utilization. Of the two municipal hospitals that are affiliated with medical schools, one shows a relatively high proportion for salaries and wages and the other is below the average. Of the seven teaching hospitals, two do not report according to this classification; of the remaining five, the proportion for salaries and wages is around the average for the whole group, with the exception of one which is a municipal hospital.

One-Fourth for Food, Ice and Water

The proportion of the whole expense chargeable to food, ice and water, averages about one-fourth of the total. In the municipal group, only three fall below the average in this regard. One of them is considerably below the average, only 12.2 per cent of the total being charged under this subdivision. It is likewise within the municipal group that the highest proportion of expense for food and ice is found—35.8 per cent. For lack of data no correlation can be worked out between bed utilization and the relative food expense. An analysis of the elements in this rubric would be extremely interesting, for there are many factors involved, including methods of purchase, quality of food, elimination of waste, as well as as the quality of the culinary art and the liberality in regard to special diets. A minor element in the situation might be the question of plant refrigeration against the purchase of ice.

The expenditures for heat, light and power cost, on the average, about 7 per cent of the total expenditures, and here again the differences may be due to both external and internal conditions. The hospitals in the colder regions require more fuel and heat than do those located in milder climates. However, the price of coal charged in different sections is also an element as is the care and attention given to the power plant. No information is available as to whether the fuel used is coal or oil and no comparison on that basis can be made. Medical and surgical supplies and equipment vary considerably from hospital to hospital, and it is impossible to draw any deductions. If the averages could have been figured on the basis of per capita per diem costs, and not in relative proportions, the comparisons would have been more instructive. Furthermore under this particular heading, the distinctions between capital investments and investments for current consumption are probably not made with any precision. The average proportion for this item of hospital expenditure is 8 per cent, while the household furnishings and supplies average 5 per cent of the total. Here again the differences between what is known in economics, as capital and capital goods, is likewise not rigidly observed. Repairs on the average constitute 3.5 per cent of the total expenses, while insurance and taxes make up an average of 1.2 per cent, and office expense, 1.7 per cent of the total costs.

Comparing the distribution of the items specified with similar averages obtained for a group of forty general hospitals in New York City, one is impressed with the striking similarity between the two, shown in Table VI.

The schedule used in this study called for hospital income in considerable detail. Unfortunately a great deal of it could not be supplied by the hospitals. The two tables give such details as it has been possible to obtain from the schedules. Table VII-A deals with hospital earnings; Table VII-B records the earnings of the dispensary and also the various gifts, as well as the income from investments. In many instances the private hospitals were unable or unwilling to report the earnings from each type of patients. In a number of instances when this was given it referred only to the payments for room and board, but the payments made for laboratory, x-ray, use of the operating room and other similar receipts were lumped together and not apportioned among the several types of patients. It was, therefore, necessary to divide these items in an arbitrary way.

Private Nurses' Earnings

The private nurses' earnings and board were reported in a number of instances; when these were not reported separately, it was presumed that they were included in the receipts from patients. To secure comparable figures under these circumstances, payments for special nurses were included in the earnings of the hospital although, of course, they do not constitute earnings. Here the hospital acts merely as an agent carrying out a financial transaction. In some hospitals the payment is made directly to the nurse by the patient and the hospital is reimbursed by the nurse for her board. Whether this practice exists in any of the hospitals included in this study is not known.

The column of earnings from private patients reveals the varying extent to which this source of income is of importance to the hospital budget. In two instances the receipts from private patients respectively constituted 88.5 per cent and

91.7 per cent of the total earnings. In both of these hospitals the cost of special nurses was not given separately and this in all probability amounted to a considerable sum. In the five non-municipal teaching hospitals the earnings from private and semi-private patients constituted from 30.7 per cent to 68.5 per cent. The relative earning power of a hospital depends on the proportion of private and semi-private room accommodations and the hospital's policy with regard to ward patients. Small hospitals in the prosperous suburbs of large cities are likely to get a relatively large aggregate income from their private patients. One of the two hospitals having the highest relative income from private patients was of this character; the other, however, was a large hospital in one of the busiest industrial centers of the country.

Nine of the twenty-five private hospitals reported income from semi-private room patients. In some instances these accommodations are liberal, as evidenced by the fact that four hospitals received respectively 21.5, 21.7, 27.2 and 29.5 per cent of the total earnings from semi-private patients. There is, however, no clearcut definition of the term "semi-private" patient. In some instances these may be patients treated in a ward, especially designated for the purpose; in others it may refer to patients in ordinary wards who pay fees to the physicians treating them; in still others, this description refers to patients in the private pavilion when they occupy rooms jointly with one or more additional patients. The per capita per diem costs as reported for this class of patients are usually the least reliable of all the per capita calculations and are invariably useless for comparative study unless accompanied by a definite statement of the meaning of the term in the particular hospital.

Majority of Service in the Wards

There are several non-municipal hospitals where the overwhelming amount of service is in the wards, as evidenced by the fact that over 90 per cent of the earnings come from patients in the public wards. There are four such hospitals, two in the Middle West, one in the Far West and one in New York State. Some of the municipal hospitals have ward rates for those who can afford to pay, others give absolutely free service to all. In one instance a municipal hospital has a small accommodation for private patients and another hospital accepts a certain number of semi-private patients.

The receipts for materials sold as well as the receipts from miscellaneous sources vary greatly. Some hospitals realize substantial sums for the sale of grease and other kinds of waste materials.

The information secured about the income from the out-patient and emergency departments, although incomplete, is superior to the information obtained about the cost of the out-patient department. The data on that point were so scant that no attempt has been made to analyze them. With regard to the income from the out-patient department, the available information is divided into three main sources, namely, fees from patients, charges for drugs and appliances and the receipts for the care of workmen's compensation cases. As will be seen in Table VII-B the information is far from complete. In some instances the income reported is the amount received from patients' fees. In another case, nothing is reported for fees, but a considerable amount is given under drugs and appliances. In this instance, the fees, in all likelihood, included the charge for drugs and appliances. Only five hospitals reported receipts for workmen's compensation cases. These receipts probably refer to patients, both in the indoor and outdoor services. In only one institution did the entire income from the dispensary and emergency services reach 7.6 per cent of the entire current income of the hospital, which includes the earnings as well as the other sources of income.

Other Sources of Income

Aside from earnings, the other sources of income are voluntary gifts and returns on investment. The voluntary gifts are subdivided into contributions from individuals and the proceeds from entertainments and bazaars. Contributions from community chests are entered under a separate column.

The income from investments varies greatly from hospital to hospital. Some hospitals in this group are heavily endowed. One of them derived 45.6 per cent of all its income from interest on endowment, another almost 20 per cent, two others over 13 per cent each. All of these hospitals are either well known institutions, some of them teaching centers of medicine, or are located in fashionable suburbs of large cities. In none of the hospitals in this group, with the exception of one, was there an excess of the average earnings of the hospitals over the average expenses of the hospital. It will be seen by comparing Table VII-B with Table I, that all these hospitals show a considerable deficit per bed in use.

The analysis made of the data obtained in this study is rather superficial. It was impossible and unprofitable to go into details and to attempt to draw valid inferences in view of the character of the material submitted.

SOME CONSTRUCTION PROBLEMS IN PLANNING THE SMALL HOSPITAL

By Edward F. Stevens, F.A.I.A., Stevens & Lee, Architects,
Boston and Toronto

IF WE consult the statistics on hospitals of this country, we find that a majority, the large majority, are hospitals with a capacity of less than sixty beds, all of which may be classed for comparison as small hospitals, so that the big problem confronting the hospital architect today is to find the best method for small hospital planning. This necessitates a careful study of its needs.

How to plan, how to proportion the rooms and departments for proper functioning together with economical construction are some of the questions to be answered.

Every hospital, large or small, to meet the minimum standards set by the American College of Surgeons, must have certain special departments and facilities for keeping and filing of records, laboratory equipment and x-ray films.

While the same processes must be gone through with hospital treatment in a forty-bed hospital as in a 400-bed institution, we must make the various departments in proportion to the bed capacity, for if we equip the small hospital with all the departments contained in the large hospital we may find the utilities out of balance with the needs of patients. For example, in our large hospitals we will plan rooms for cut flowers, rooms for making surgical dressings, for stretchers, and other special rooms, all of which are necessary in the larger units, but which may be entirely out of proportion in the smaller unit, where the flower room may be combined with the bath room, the surgical dressings carriage kept in the utility room and the stretchers kept in some unused corner of the corridor. And the corridor which may seem narrow at eight feet in the large hospital may be brought to seven feet or even six feet six inches in the smaller unit. Likewise in the diagnostic department a few small rooms will serve for ophthalmology, otolaryngology, pediatrics, dental, surgical and medical treatment, as well as physiotherapy, using the same rooms at different hours. Similarly the x-ray department with its modern portable apparatus may be housed in a comparatively small section.

Illustration by courtesy of the Journal of the American Medical Association
First floor, Soldiers' and Sailors' Memorial Hospital, Penn Yan, N. Y.

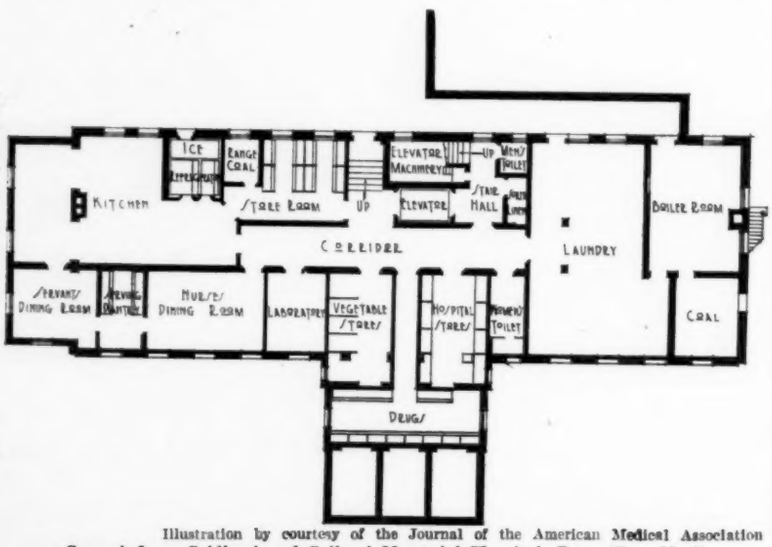


Illustration by courtesy of the Journal of the American Medical Association
Ground floor, Soldiers' and Sailors' Memorial Hospital, Penn Yan, N. Y.

Whatever the department, whether it be for diagnosis, treatment or service, the patient is of paramount importance, for it should always be borne in mind that the hospital is built because of the sick patient, and the various departments should be best arranged to administer to his every need.

Next to good medical attention and good nursing might be placed the environment of the hospital building, whether it is located in a noisy section or a quiet neighborhood. Because some good friend, through the kindness of

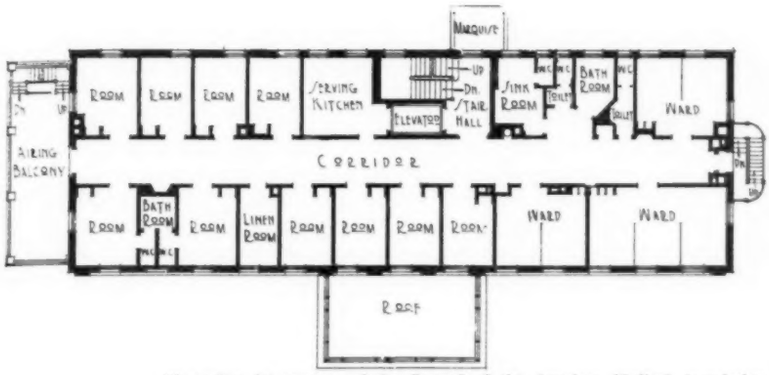


Illustration by courtesy of the Journal of the American Medical Association

Second floor, Soldiers' and Sailors' Memorial Hospital, Penn Yan, N .Y.

his heart, or desiring to rid himself of taxes, offers his ancestral home, of which he may have tired, as a hospital, it does not always follow that such a gift will make an economical hospital. More often it is an added expense, for few residences can be adapted to the economical housing and care of acute patients. However, the location of the home may be ideal and the residence is often well adapted for use as a home and school building for the nurses.

While I believe that designing the hospital, as it should be, around the patient is the important factor of every hospital, the exterior should not be forgotten, since people are largely influenced by first impressions. If the prospective patient approaches the new medical institution for the first time in a highly nervous condition and the building has a forbidding exterior, no matter how completely the rooms are appointed, or how excellent the nursing service, there is that first impression, which is dispelled with difficulty.

The same thing is true with respect to the entrance to the hospital. I have often been asked, "Why waste space and money in the entrance?" Not so, since first impressions count. If the incoming patient is met by a genial and sympathetic hostess, conducted to a comfortable chair or couch in a carefully decorated, furnished and lighted reception room, how different her whole mental attitude will be toward the institution at the very start, and confidence in the hospital and staff is at once established.

This effect of cheerfulness should prevail throughout the building. The patients' rooms may be small but the walls should be painted a cheerful color, with harmonizing curtains, tasteful covers for tables and chairs, and a rug or two. Carefully selected colors and furnishings add greatly to the importance of restful surroundings.

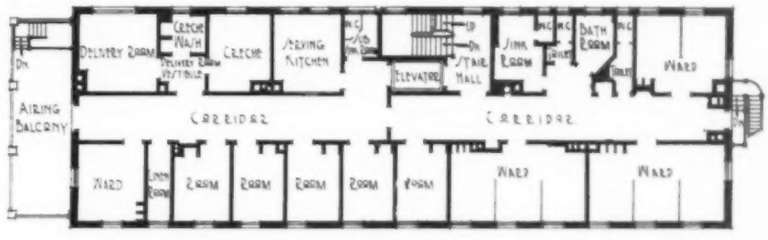


Illustration by courtesy of the Journal of the American Medical Association

Third floor, Soldiers' and Sailors' Memorial Hospital, Penn Yan, N. Y.

Sunlight, whether the hospital is in the North

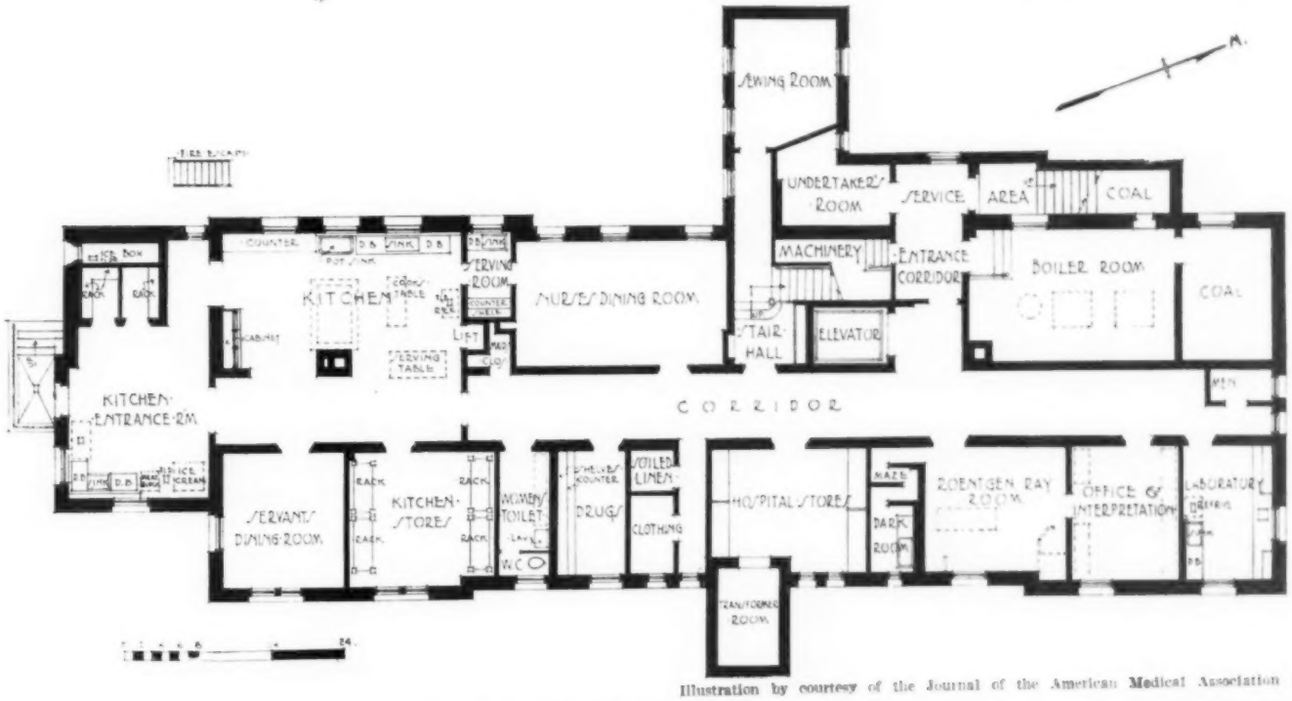


Illustration by courtesy of the Journal of the American Medical Association

Ground floor, Mary Lane Hospital, Ware, Mass.

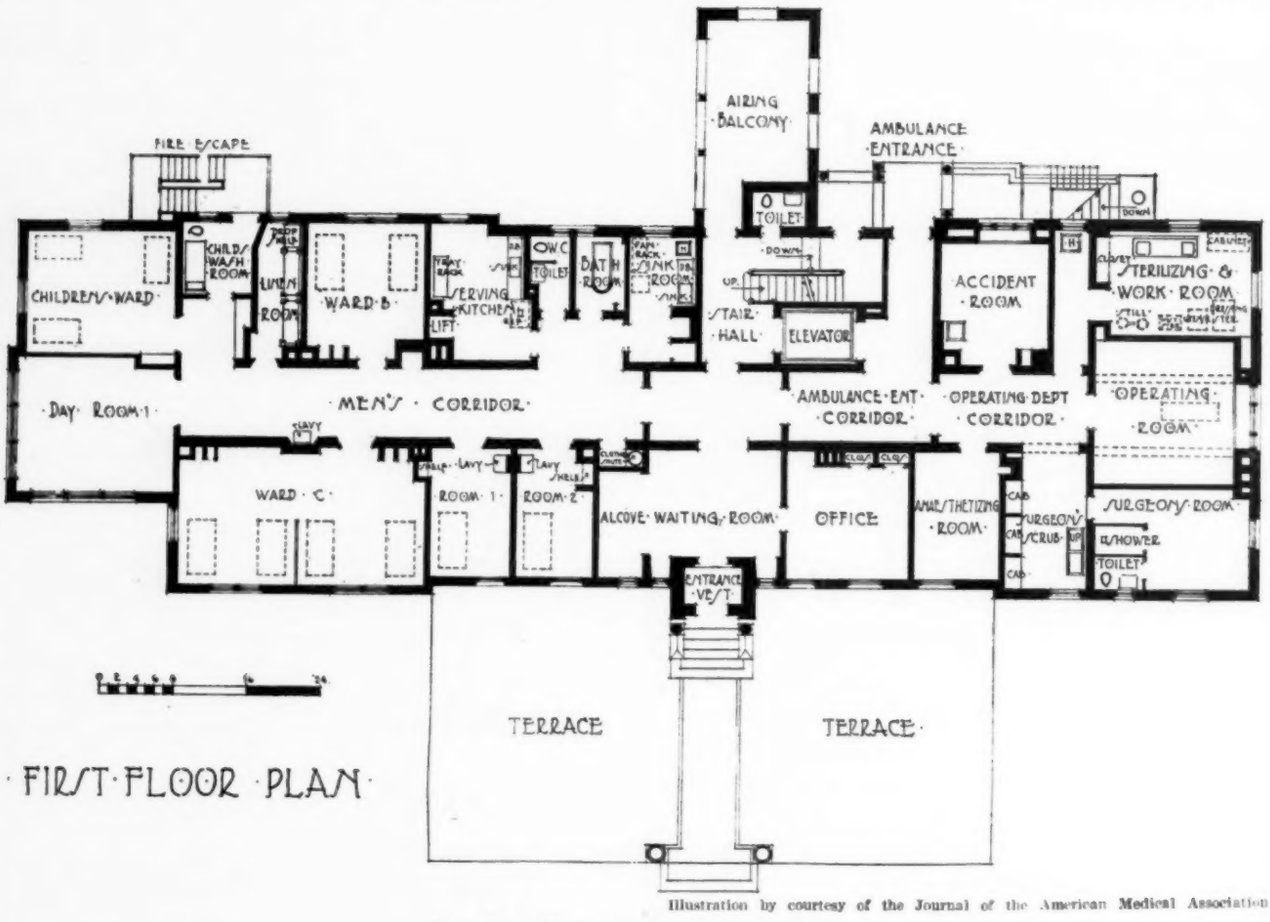


Illustration by courtesy of the Journal of the American Medical Association

First floor, Mary Lane Hospital, Ware, Mass.

or South, carries with it the health giving element and it is advisable, if possible, to place all patients' rooms where they will be accessible to sunlight, at least for part of the day. As a disinfectant alone, nothing is better. When we witness at the clinics of Rollier and LaGrosso in Europe the almost miraculous recoveries resulting from the mere exposure of the body to the direct, and even indirect, rays of the sun, we begin to realize its great healing power. While the ordinary window glass cuts out much of the healing rays, within the last two years chemists have perfected a glass

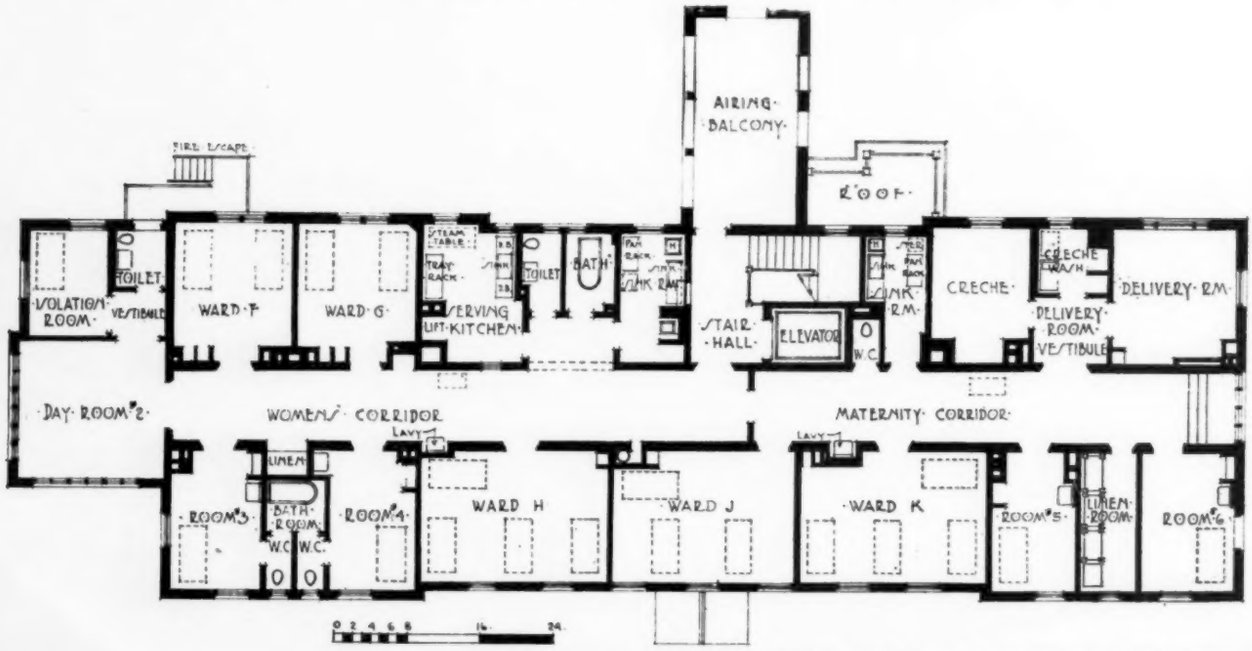


Illustration by courtesy of the Journal of the American Medical Association

Second floor, Mary Lane Hospital, Ware, Mass.

that permits the passage of the ultraviolet rays of the sun.

Even peaceful, cheerful surroundings may be quickly nullified by the wrong placing of hospital utilities. An elevator door, always more or less noisy, opening opposite a patient's room, the washing of ward utilities in rooms without proper soundproofing, the unnecessary clicking of fixtures and hardware and all similar disturbing noises may be eliminated or at least minimized by careful planning.

With the patient peacefully resting in her room, let us consider the workshop of the hospital and how each department of the hospital will function toward the early recovery of the patient. By workshop I mean the surgical department, the kitchen, the laundry, the various laboratories as well as the administration of the various services.

In many cases in a small hospital, I have found that by placing the entire workshop on the first floor or first floor and basement, that much room was saved in addition to the efficiency attained by doing the work away from the patients' rooms. The surgical department might be placed at one end of the building, where the north light could be secured, and the kitchen at the other end, or the kitchen could be placed in the basement, and the x-ray and laboratories on the first floor. With the placing of all these service departments on the first floor and basement the other floors are naturally left undisturbed for patients and the patients' utilities, with a subsequent saving in service by this planning.

Surgical Facilities

The facilities for surgical operations are the same in a small as in a large hospital and I have found that the number of operating rooms depends on the amount and kind of surgical service. The morning hours are usually used and if there should be several surgeons on the staff with many operations it may be necessary even in the small hospital to have several operating rooms. Since there are emergencies in every hospital, I think it wise to provide at least two operating rooms, one of which may be used as an accident or septic room and perhaps connected directly with the ambulance entrance, as indicated on the plans of the Penn Yan and Mary Lane hospitals shown on the preceding pages.

With the growing popularity of ethylene as an anesthetic, I believe that all operating room floors should be constructed to protect the patient against possible static conditions by electrically grounding all apparatus used near the patient. This can readily be accomplished while the building is being erected by building in metal strips in the floor construction to which contact is made through dragging chains on each fixture.

As most surgeons prefer the use of artificial light in operating rooms, there is no longer cause for worry over the absence of a skylight on a first-story operating room.

Perhaps a word about the kitchen would now be in order. So diverse are the opinions concerning the best food service for patients that I hesitate to mention the subject here except to mention a few fundamentals in kitchen planning.

In planning the kitchen the cross currents should be avoided where possible.

With an ever changing corps of attendants some form of food service should be worked out that will assure the patient palatable food at the proper time and in an attractive form.

Food Service—a Local Problem

Whether the trays should be laid in a central serving room and sent to the various floors on quick running lifts or whether the food should be taken in bulk by an attendant to a serving center on each floor and these dispersed or taken in bulk to the bedside and there served is largely a local problem. The tray service from a central station is ideal, but it entails a complete synchronizing on all floors of the movements of the entire serving staff, and failure to do this defeats its purpose.

The other departments of workshop—the laboratories, the x-ray, the drug room, the laundry and heating plant, as well as the abundant storage facilities, must be provided for and should be planned with due regard to the number of patient always allowing for the future growth of the institution.

Facilities for getting the patient into the sunlight and air should not be overlooked, and to that end airing balconies should be provided, or roof wards should be planned.

The comfort of the visitor, too, is to be borne in mind by the provision for central day rooms where convalescent patients may meet their friends.

To illustrate some of the principles of the foregoing, two sets of plans of small hospitals are shown, one the Mary Lane Hospital, Ware, Mass., and the other the Soldiers' and Sailors' Hospital, Penn Yan, N. Y. The Ware Hospital is planned for thirty beds and the Penn Yan for thirty-one. In both of these hospitals the operating rooms are on the first floor. Both have a maternity department and both are equipped with kitchens, x-ray and laboratory departments. At Penn Yan, the cubicle system in wards was planned for both buildings, which are of fireproof construction.

STUDIES ON HOSPITAL PROCEDURES

THE MATERNITY DEPARTMENT

The Prenatal Clinic—The Maternity Hospital Division—The Postnatal Clinic

The sequence of titles that head this article was chosen because it was the intention of the writer to indicate the course of the patient, beginning with the out-patient study in the prenatal clinic; followed by entrance into the maternity division and delivery therein, with later follow-up care for mother and child in the hospital's postnatal clinic.

It may be safely stated that no maternity department is complete without the added aid, in the treatment of patients, that a prenatal and a postnatal clinic afford. Indeed, the time has long since passed when obstetricians are willing, from the standpoint of properly safeguarding the interests of their patients, to see them first on their admission to the hospital's maternity ward. It is the belief of public health workers everywhere that infant and maternal mortalities can be and are being lowered by the efficient study and care of out-patient clinics, prior to admission to the hospital.

It will be the policy, therefore, of this article to consider the maternity department as consisting of certain wards and rooms within a general or special hospital, and in no less inclusive sense, to discuss as parts of this department the two out-patient clinics mentioned above.

There are in the United States, 553 hospitals that are approved by the Council on Medical Education and Hospitals of the American Medical Association as suitable for training interns. These hospitals contain 149,221 beds. All but twenty-eight of these institutions have a well regulated maternity division, as a part of their organization. In twenty-eight instances the approved hospital has a close affiliation with other institutions that receive maternity cases. Most state boards of medical education require that hospitals which are approved as proper places for preparing young physicians to enter practice shall offer a definite length of service in the care of pregnant women.

It will not be the aim of this article to discuss, from the obstetrician's point of view, the procedures carried out in this department. However, it will be noted that statements are made that apply more or less generally to visiting and resident obstetricians. This becomes necessary because such information is required by all those who come in contact with the patient, that is, the visiting physician, resident physician, interns and nurses.

THE PRENATAL CLINIC

The aims of a properly conducted prenatal clinic are threefold: Educational, preventive medicine and curative.

There is no finer opportunity offered in any clinic than that which is afforded in the prenatal out-patient department, for here the physician is able to begin, figuratively at least, the treatment of the child months before its birth. Here information can be imparted to the future mother in regard to many matters of personal hygiene, which cannot but favorably affect the chances of the child, not only insofar as the danger incident to its birth is concerned, but also as to the incidence of those diseases that take so heavy a toll during the first year of its life.

As to the question of the preventive medicine activity of the clinic, it can be stated that the performance of serologic and other laboratory studies in the clinic will reveal the absence or presence of serious renal or other toxic states in the mother, which may endanger the lives of both herself and her child. The detection of pelvic deformities before the fetus reaches maturity is another of the numerous activities that make the prenatal clinic of great value to the public and the hospital.

As to the last—the curative aim and function of the prenatal clinic—the physician not infrequently is able to learn of the presence of medical or surgical conditions, the correction of which will make more safe and more certain the successful outcome of the difficult period through which the patient must soon pass.

Location

In institutions that do not possess a dispensary building in which all of the out-patient departments are housed, the more conveniently the prenatal clinic is situated to the maternity department the better. Indeed, ofttimes when the maternity division is housed in a separate building, the prenatal clinic meets on the ground floor of this same structure. This arrangement appears efficient from several angles. Frequently, the prenatal clinic is supervised (and it appears that this is a good arrangement) by the same

nurse or nurses who have charge of the maternity department. Likewise, the resident physician and interns assigned to the maternity division ofttimes are those who are on duty in the prenatal clinic. This arrangement serves to relieve the mind of the patient who has an inherent fear of hospitals and hospitalization. When such a patient comes for admission to the hospital proper, she is gratified and pleased to meet her old friends—the doctors and nurses of the prenatal clinic—who will care for her now.

If the institution possesses an out-patient department housed in a separate building, the same arrangement as to personnel can be made, even though there is added the slight inconvenience of an increased distance from the in-hospital department.

Organization

The prenatal clinic is usually headed by one or more active assistants of the visiting obstetrical staff. It is probably a good scheme to have one member of the major staff designated as its official representative, in charge of the prenatal clinic, this man to serve throughout the year. The service in this clinic is somewhat more stabilized by having such an arrangement, as compared with the other scheme in common use which contemplates a change in supervision each time the in-hospital service changes.

If obstetricians are on duty for a three-months' period, for instance, as each successive chief comes on duty his assistant assumes charge of the obstetrical out-patient department. If a twelve months' service in this clinic, as has been suggested, is not feasible, then the assignment of a resident house officer to the clinic for the whole year serves, in a measure, the same purpose.

Most hospitals have a rather constant head nurse assignment to their major departments, and if this is true in the prenatal clinic the head nurse would aid in stabilizing the service there, from one chief's service to the next. The interns' assignment to the maternity service is usually from two to four months in length, and their service on the prenatal clinic is usually concurrent with this period of time.

It might be wise for the intern, who is to receive an assignment to the maternity service, to be required to work in the prenatal clinic during the two or three months prior to actually beginning his maternity in-patient work.

One should not forget to stress the importance of proper social service work in the prenatal clinic. The success not only in the efficiency of the work performed there, but even the size of the clinic itself, is frequently in proportion to the activity and intelligence of the social worker assigned thereto. It is she who first sees the new patient, and who first impresses upon the fearful applicant for treatment the desire and ability of the hospital to care for her properly.

The Admission of Patients

It has already been suggested that it is highly desirable for a large percentage of patients who are delivered in the maternity division, to approach that division through the prenatal clinic. Here, as in every other activity in the treatment of patients, the accumulation of proper and complete data is of the highest importance. The preparation of a proper history sheet for use in the prenatal clinic is, first of all, necessary. Upon this sheet, which may be in the form of printed notations or divided into general headings, should be placed such information as the record of previous admissions; high points in the personal history, such as an earlier incidence of rickets, scarlet fever, diphtheria, lues, gonorrhea or other conditions that might unfavorably influence the safety of the child or the mother.

Here, also, should be included a complete history of previous pregnancies, with a notation as to headaches, vomiting, edema, hemorrhage, eclampsia, or any other statement that will convey to the physician the presence of abnormal tendencies on the part of the patient. Information should also be found on this sheet relative to other children in the patient's family, such as weight at birth, age of the oldest and youngest, and the cause of death of any that are not now living. Menstrual description as to type, duration, pain, and date of first or last menstruation, should also be noted.

There is no more important information to be extracted from the prenatal history sheet than the physician's measurements of the patient's pelvis. The accuracy of these measurements ofttimes determines, not only the date of the patient's admission to the hospital, but also the need for surgical interference at the time of her entrance. Accurate and continuous blood pressure estimations, and urinalyses; at least one or more blood chemistry studies, and, in the presence of abnormal conditions, the result of eye-ground studies of the patient should be inscribed on this history form.

The social service worker is usually required to provide, and inscribe on the chart, certain facts in regard to the occupation of the husband, his wages, and some statement relative to the routine expense of maintaining the patient's family.

As to the examination of the fetus—the location and character of its position, presentation, movements and heart beat—all must be ascertained and

recorded on each visit of the patient to the clinic. The height of the uterine fundus, and the presence or absence of engagement of the fetal head, are also facts that should be recorded on the history sheet. It is important that this information, the nature of which has been suggested above, be compiled on the patient's first visit to the dispensary. A strong effort should be put forth by the clinic workers to persuade patients to come to the prenatal clinic early in their pregnancy.

Many history sheets have, at some conspicuous place, a small space set aside for notation as to particular points of interest in regard to the individual patient. It is also necessary for ample space to be allotted for recording the laboratory and clinical observations that result from each visit of the patient to the dispensary.

As the time for delivery approaches, each patient is given a card, which denotes that she has been studied in the prenatal clinic. Upon this card may be noted certain precautionary statements, relative to the patient's condition. The use of such an admission card is necessary because of the fact that the patient may unexpectedly fall into labor, and prompt admission to the hospital be urgently required at a time when the patient would be brought under the observation of a physician who is not informed concerning her condition.

If the case is an infectious one, as a result of lues or gonorrhea complicating pregnancy, this card may be of slightly different color, or may in some way transmit this information to the receiving physician without the patient's knowledge as to the significance of the particular card which she bears. Apropos of the last statement, it may be added that the physician in the out-patient department should not neglect to ascertain the presence or absence of this type of infection, since its presence may unfavorably affect the child at and after birth.

Special Activities of the Prenatal Clinic

It has been intimated above that during the visits of the patient to the prenatal clinic much practical information can be imparted to her which will be of benefit, not only during her prenatal period but after her child is born.

The hospital dietitian frequently finds that she is able to interest the expectant mother in the preparation of common sense, inexpensive, yet nutritious food for her own use. It is customary in some good hospitals for the dietitian from time to time to conduct classes for women attending the prenatal clinic. At this session the preparation of food is actually performed by the dietitian, and the clinic visitors are rewarded for their attention and attendance by being allowed to consume the food that they have observed being cooked.

In no less practical degree may the occupational therapist demonstrate the preparation of suitable clothes for the mother and a layette for the baby. If the hospital finances permit, it would be a fine thing for the members of this sewing class to be presented with the baby garments that they have made. If this is not possible, sometimes the mother is required to furnish the materials, and the hospital worker gives instruction as to their use.

The hospital dentist should be brought into the picture, and each prenatal patient should have careful mouth examinations. If the institution is not equipped to do preliminary repair of cavities, the patient may be directed to a free clinic in the vicinity.

Classes may also be held by the director of the clinic, during which brief talks on personal hygiene may be delivered. Particular attention in all of the steps mentioned above should be given in regard to primipara, and in prenatal clinics of size, special educational classes may be held in which those who are expecting their first child may be included.

THE MATERNITY DIVISION PROPER

The maternity division usually consists of several wards, not of greater size than eight or ten beds, the number of private rooms depending upon the requirements of the hospital's clientele; one or more labor rooms for ward service; one or more isolation rooms for eclamptic or delirious patients, or for complicated cases, such as pregnancy, associated with tuberculosis, or some other transmissible condition.

Facilities, in the form of one or more isolation rooms, should also be provided for infected cases, whether they be septicemic or of venereal origin.

It should not be necessary to state that this department should have a separate delivery room, and that the general operating room of the hospital should not be used for this purpose. In conjunction with this delivery room should be found a sterilizing room for gauze, water and instruments, this room not being used in common with surgical or other hospital departments.

In hospitals where money and facilities are available ofttimes the private room department is provided with the same conveniences as have been mentioned above for ward service. It is also thought best to have a small ward for patients who for any reason must be admitted to the hospital some days prior to delivery, as well as provision for those who are delivered at home before hospital entrance could be secured, or who must

be admitted for treatment during the puerperium.

The ward beds must be cubicled, with permanent construction of wood or glass, or may be separated by curtains, properly placed on rods or rails.

The above description has had reference particularly to the care of the mother. The nursery should be at sufficient distance from the maternal ward, so that crying babies will not disturb the rest of the mothers, but at not so great a distance that the carrying of babies will be too time-consuming on the part of the nurse.

Proper bathing facilities should be adjacent to the nursery. Some obstetricians feel that the presence of a warm room for the care of premature babies is more advantageous than incubators. This, however, is a matter of individual preference, concerning which no general statement can be made here.

Organization

A resident physician is usually placed in administrative and medical charge of the division, to facilitate the care of patients during the absence of the chief obstetrician and to carry out his orders during this time. When one or more interns are assigned to the division, it may be stated that the schedule should be so arranged that at no time is there an absence from the institution of a designated physician for this division. The resident physician, being of greater experience and judgment than the intern, is an added safeguard to the welfare of the obstetrical patient.

Each patient upon being admitted to the maternity department should be at once seen by a physician, and an examination and record of his findings should at once be made. Too great reliance must not be placed upon the records from the prenatal clinic, since the patient's condition may have changed since last seen in that department. A special history form, a portion of which may be omitted if the patient has been seen in the prenatal clinic, should be at hand. This history form should contain adequate space for completing the record of the patient's labor history, covering such matters as the condition of the patient at onset, presentation and position of the fetus, character of labor, place and position of fetal heart; length of labor; type of delivery employed; nature and amount of anesthetic; time of delivery; description of placenta, and notations as to the scope and type of repair work done.

There should also be found on this chart a complete description of the child, with standard measurements, as well as a notation as to the presence or absence of asphyxia, abnormal respirations, etc. This record, to which reference has been made, usually takes the form of a four-page folder, upon the back of which may be found a complete description of the puerperium, including a final statement on the patient's discharge, covering a complete, final physical examination. Here may be inserted any instructions or information that may be useful to those in charge of the postnatal clinic.

If there is not sufficient room on the maternal chart for a complete description and record, relative to the baby, a separate sheet is often used for this purpose. It may be stated here that it is rarely the case that these records possess too great detail.

As has been indicated above, it is necessary that the maternity division should have definitely outlined, and understood rules governing the work done therein. A few of the general rules that might be applicable to this department are suggested below. No attempt has been made at completeness, because each hospital is more or less a rule unto itself in regard to this matter, and there is no technique that is generally accepted by obstetricians.

Rules Governing Maternity Division

The rules governing the maternity division usually have their origin as a result of the deliberations of a staff committee. The enforcement of these rules, after they have been approved by the board of trustees, is placed in the hands of the superintendent of the hospital.

1. All persons, including visiting physicians, interns, resident physicians, and students, on entering any of the wards, delivery rooms, or nursery of this division must enrobe with a suitable gown, provided by the hospital for this purpose.
2. The general deportment of all persons working in this division, including visitors to patients, shall be dignified and orderly. Loud talking and laughing are prohibited.
3. All patients admitted to the maternity ward (if time and their condition permit) are to be promptly given a general bath. If the patient is approaching delivery, preparation therefor must be immediately performed.
4. Every admission to the maternity division must immediately have a blood pressure reading, and a vaginal smear taken, as well as a specimen of urine sent to the laboratory.
5. Routine functional kidney tests shall be made on all patients on admission, and blood pressure observations shall be made and recorded twice a day until the patient is discharged. Toxic patients shall be immediately catheterized on admission, and the urine examined at once. This specimen should be tagged, indicating that espe-

cial vigilance is required in searching for diacetic acid and acetone.

6. If the patient has not been studied in the prenatal clinic, pelvic measurements, and a complete physical examination shall be done at once.

7. The resident physician on the service must be immediately notified by the intern in cases where such abnormalities as pelvic deformities, toxemia of pregnancy, hypertension, malpresentations and positions, placenta praevia, hemorrhage or threatened abortion exist.

8. The resident physician must supervise, in the absence of the chief, all forceps deliveries, versions, breech extractions, and, if it appears necessary, perform them himself. He must be present when episiotomies are done, and shall supervise their repair. Pituitrin must not be given before the delivery of the patient, unless ordered by the resident physician, the chief obstetrician or his assistant.

9. It is advisable to use, routinely, an anesthetic for delivery, provided time permits. The resident physician on service shall be responsible for the safety of the patient during these procedures.

10. Only those visitors shall be admitted to the maternity division who have been given special permission by the resident physician in charge.

It is important that definite rules, relative to the catheterization of these patients, should exist. Below are outlined the rules employed in the Jefferson Hospital, Philadelphia:

It is understood that catheterization is governed by the amount of distress the patient suffers, and not by time. Normal cases should not be catheterized, either before or after delivery, unless absolutely necessary. Operative cases, either local or abdominal, must be catheterized shortly or immediately before operation.

After operation the catheter is not to be used unless indicated.

As a rule, it is not necessary to catheterize for ten hours after operation, but alteration of this rule is governed by the distress of the patient, and not by the number of hours that have elapsed.

Catheterization is done to prevent, or relieve distress. This, not time, is the indication.

Method of Catheterization

1. Scrub hands with brush, soap and warm water for five minutes.

2. Immerse in lysol solution (1 per cent) for two minutes.

3. Apply gloves.

4. Cleanse vulva and vestibule with warm, never cold, 1 per cent lysol solution.

5. Swab external meatus with 10 per cent argyrol solution.

6. Use sterile glass or soft rubber (No. 20) catheter. Before introduction, dip catheter in argyrol solution (10 per cent).

7. Collect specimens in sterile graduate in the event that an examination is desired.

8. After withdrawing catheter, again cleanse meatus with warm lysol solution, and dry parts with cotton sponge.

Delivery-Room Technique

Normal Delivery: All patients shall be kept as long as possible in the labor room before being transferred to the delivery room.

Indications for this transfer shall be the rupture of membranes, or the bulging of the perineum.

The time at which labor begins should be noted on the patient's chart.

The gown adopted by the hospital in question is then placed upon the patient, and no sheets or blankets used in the ward shall, under any circumstances, be taken to the delivery room.

Delivery Trays

It is the custom in most hospitals to employ a regulation tray system, used at the time of delivery.

Instrument Tray: Forceps for low and median application; two scalpels; two pairs of scissors (curved and straight); two rat-tooth forceps; two traction forceps; one uterine dressing forceps; one placental forceps; one needle holder; one perineal retractor; one Edebohl's speculum; one Sim's speculum (large size); one Grave's speculum (large size); two long-bladed retractors; one perineal retractor; one package of needles, containing three long, semi-curved round needles; three long, semi-curved cutting-edge needles and three medium sized, round fascia needles; chromic catgut, Nos. 1 and 2; four curved hemostatic forceps.

Dressing Tray: Two uterine and vaginal packs, each pack to be composed of one square yard of plain sterile (not iodoform) gauze; one package of dressings; two one-quart beakers (these are to be used for the vaginal wash solutions); three small porcelain dishes—one for iodin, and one for 75 per cent alcohol; four table covers; one delivery sheet; six towels; two perineal pads; one "T" binder; two pieces of umbilical braid, ten inches long; one umbilical dressing, to be made as follows: A piece of gauze, four inches wide, ten inches long, selvage edges and ends turned in; gauze folded upon itself to the width of one inch; one umbilical binder, provided with

two small safety pins (the binder is to be made of a piece of plain gauze, thirty-six inches long by eighteen inches in width (selvage edges and ends are to be turned in), folded upon itself to a length and width of thirty by four and one-half inches); four cotton-swab applicators.

The above-named articles, beginning with the umbilical cord braid, are to be prepared in one package. This is to be marked "U. C. D." The package is to be sterilized, and used exclusively in caring for the umbilical cord.

Infant's Tray: One hot water bag; two sterile medicine droppers; four ounces of 75 per cent alcohol; two ounces of fresh boric acid solution; one ounce of silver nitrate solution (1 per cent, fresh, weekly); four ounces of normal salt solution; one ounce of tincture of iodin (3 per cent); four ounces of sterile olive oil; one ounce of sterile albolene; several cotton swab applicators; identification necklace (this must be applied, previously sterilized, before the baby leaves the delivery room, using the implements necessary to seal the necklace about the baby's neck); implements and material for taking foot and finger prints (prints of both mother and baby must be taken before they are removed from the delivery room).

Drug and Hypodermic Tray: Two small sterile hypodermic syringes, with four sterile needles; fluid extract of Ergot, with medicine glass, medicine tube and water for the dilution of the drug; hypodermic tablets of strychnin, atropin, and some form of digitalis, as well as ampules of pituitrin and aseptic ergot.

Note: The trays listed above are those used at the Jefferson Maternity Hospital, Philadelphia.

Care of the Baby

Opinions differ as to whether attention should be paid to the baby's eyes as soon as it is born, or whether this step should be delayed until the umbilical cord has been severed. Most obstetricians, however, prefer that the baby's eyes be attended to as soon as the cord has been cut.

The margins of the eyes are then cleansed with cotton swabs, and washed in boric acid solution, the swabs being removed from within outward. The eyes are then flushed with boric acid solution, and two drops of fresh 1 per cent solution of silver nitrate are placed in each eye. In some hospitals this solution is followed, in three or four minutes, with a douche of normal salt solution.

In the earliest times religion and medicine, the care and cure of soul and body, went together, and hospitals were the result of this union. The earliest hospitals were the temples of the gods, whose favor gave, and whose displeasure robbed of, health. The superstition existed that "the divine art of healing" was a gift of the gods.

LENDING A HAND TO SOLVE THE NURSING PROBLEM

The Committee on the Grading of Nursing Schools, which is a cooperative committee of members officially appointed by seven national nursing, medical, and public health organizations, is in the midst of a gigantic inquiry into the truth about the nursing shortage. If you live in Massachusetts, New York, Pennsylvania, Georgia, Louisiana, Illinois, Kansas, Wyoming, Washington, or California, the chances are that you will receive one of the questionnaries sent out by the committee.

This marks the first real effort to get at the truth about the supply of, and the demand for nurses. Some nurses and doctors believe emphatically that there is no shortage in any real sense of the term. Others, equally competent to judge, declare that there is actually a very serious shortage. This is an effort to find out the facts. Cooperation is asked of hospitals in answering the questions that may be asked.

The committee is canvassing private duty, hourly, public health, and institutional nurses; superintendents of nurses in hospitals; directors of public health nursing organizations; heads of registries; physicians and surgeons; and through them many thousands of patients. The questions are simple, and can probably be answered in ten minutes. Unlike most reports, the committee suggests that no names be signed, but in each case the writer is asked to give a full and frank expression of opinion on the back of the sheet, and then mail it directly to the committee.

HOW THE BILL COMPARES

Commenting upon patients' reaction to hospital bills and service charges, Dr. L. B. Rogers, managing director, St. Francis' Hospital, San Francisco, Calif., says in a recent issue of *Better Health*: "It sometimes happens that when a patient is ready to go home he objects to certain items of expense shown on his bill, for example, $25 for use of an operating room. When it is explained to him that this charge includes the service of one resident physician, one anesthetist to administer the anesthetic, five or six especially trained nurses, one or two orderlies, for a period of one to two hours, not to mention the surgical supplies and dressings, which are used in large quantities at most operations, he not only is satisfied with the bill, but in his own heart wonders how so great a service can be rendered at so small a cost. Perhaps he remembers the bill he received from his garage the previous month for overhauling or repairing his automobile. If he has recently received a bill from his plumber, he will be much more reconciled to the hospital bill."

A PRACTICAL EXECUTIVE'S FILE

Many superintendents and hospital executives feel the need at some time for a file that will bring to their finger tips all the new ideas about which they read in their favorite hospital magazine. The plan adopted by a young doctor in a New York hospital should be of some value as a basis for working out some such file.

The file is divided into such general classifications as administrative procedures; dietetics; nursing; engineering; management; purchasing; clinical subjects; out-patient service; buildings and equipment. Each of these is subdivided into as many classifications as are necessary to make the file complete.

Editorials

A SIMPLE MATTER OF ARITHMETIC

IN 1913 the daily per capita cost at one of the largest and most representative hospitals in the United States was $2.83. In January of this year this item had increased to $6.65, an increase of 135 per cent. In 1913 this same hospital charged for its ward beds $2 a day and today it charges $4 a day. The charge for private rooms in 1913 ranged from $4 to $8 a day and now the charge ranges from $6 to $10 a day. Other hospitals in the same locality report similar figures.

The cost of hospitalization has gained 135 per cent while the charge to the patient has increased only 100 per cent on the wards and 33 per cent in the rooms, an average of 66 per cent, or less than half the increased cost. This is only half the story.

In 1913 the average length of stay per patient was fifteen days and in 1926 the average length of stay had been cut down to less than twelve days. As a simple example in arithmetic consider the following: If a patient had stayed fifteen days in a room at $8 a day in 1913 what would have been the total cost as compared with his staying in the same room in 1926 at $10 a day for twelve days? The answer will show how much the cost of rooms has increased in thirteen years.

While costs of construction, food, equipment and supplies of all types have been steadily mounting until January of this year when a slight downward trend has been reported, hospital room charges have been standing practically stationary while wages have been skyrocketing, especially among the groups who are called those of moderate means—skilled laborers, mechanics, "white collar" workers, etc.—the charge for room service in hospitals has stood still, and this in spite of the fact that every well conducted hospital will show a lowered death rate as compared with that of 1913.

The imputation that special charges have increased is often heard. They have—considerably. Yet if the patient is charged for metabolism, blood chemistry, electrocardiographic and x-ray work his bill will not exceed $50 for extras, certainly a modest charge when it may mean saving his life. In the majority of cases all of these services may not be necessary and patients may be assured that these special services are used only when necessary and when the attending physician prescribes them.

Efficient management of hospitals has been the cause of keeping down the charges and reducing the number of patient days in the hospital. By this same type of management the further reduction of costs to patients, a higher percentage of free work and increased educational facilities will be made possible. Any industrialist would consider the superintendent who had been able to keep his charges to an even level in face of rising costs a superman and an extremely valuable adjunct to any business.

EXPERIMENTS OR EXPERIENCE FOR INTERNS?

"THE hospital is the only proper college in which to rear a true disciple of Æsculapius." So spoke, many years ago, John Abernethy, the distinguished surgeon of old Saint Bartholomew's in London.

But in inculcating true Æsculapian principles into the minds of young physicians, there must be drawn a definite and clear-cut distinction between ill-advised and carelessly supervised applications of medical theory, and the conservative and well considered acts of the physician of experience. For the young doctor of medicine to be given a too free rein in the treatment of hospital patients is neither best for the intern nor fair to the patient. Nor is it to be denied that young physicians are sometimes too ready to apply routinely, to the individual patient, principles of therapeutics which may safely relate to the class but which require the ripe judgment that comes only with age, to detect the exception. It is in such matters particularly that the intern needs the advice and guidance of his seniors.

Supervision of each step in the medical or surgical treatment of disease is a duty that the visiting staff owes to each intern. But the apparent readiness of some young physicians to undertake steps that their experience does not justify, is not always an expression of foolhardy, scientific zeal; it is rather merely an evidence of the self-assurance of youth, which may be seen in almost every walk of life.

To encourage or allow the surgical intern of but a few months' hospital experience to perform major operations, without the guiding hand and judgment of his chief, is in no way warranted. For the least important part of surgery is the wielding of the scalpel, although the recent graduate in medicine too often elevates the business of incision and suture far above other attainments of the surgeon, which are much more difficult to secure, and of far greater importance to the patient. Skill and accuracy in diagnosis; an ability to know when to act and when to delay; judgment

as to the extent of the disturbance of tissues that the patient can safely undergo, are attributes that require years of careful, patient apprenticeship to acquire.

To encourage, yet to curb; to stimulate, yet patiently to guide the uncertain steps of the neophyte in the temple of Æsculapius, is the duty of each visiting surgeon, physician, and hospital executive.

Experimentation has no place where human life is at stake. Experience is "the pearl of great price" which the intern seeks, but it must be gained at the profit, not at the expense of the patient.

MEDICAL EDUCATION AND THE HOSPITAL

THE preliminary report of the Commission on Medical Education presented by Dr. Willard C. Rappleye at the recent Congress of the Council on Medical Education and Hospitals of the American Medical Association, in Chicago, emphasizes the importance of the role that our institutions play in the education of the young physician and their influence in shaping the practice of medicine.

The many scientific advances that have been made in the field of medicine in recent years have made it almost impossible for the physician to render competent and complete service, especially in the case of serious or puzzling illness, except in the well equipped and manned hospital.

The specialization that is found in our institutions, the consequent division of responsibility for the care of the patient, the degree of reliance for diagnosis upon laboratory procedures, radiographic examinations and various mechanical devices and the use of elaborate therapy equipment only too often create an impersonal and harshly scientific attitude toward the patient and produce in the mind of the young medical graduate an erroneous idea of his responsibilities concerning the patient.

Since from the time he enters the medical school until he leaves his internship the student is in the hands of teachers who are expert and highly trained specialists he has no opportunity to see the practice of medicine as a whole. He is hesitant about entering individual practice under conditions that do not provide all these highly organized and technical services and should he still possess the courage to do so, finds himself unprepared to meet the responsibility for the entire care of his patient.

In view of the efforts that have been and are still being made to improve hospital facilities and service standards, and the knowledge that there is still much to be done in this direction, one hesitates to suggest that there is too great a demand for laboratory service of all kinds. Yet when one sees the young graduate unable to interpret clinical findings without the use of these many aids to diagnosis, fearful to pronounce an opinion except after he has complete confirmation by some mechanical procedure or other exact laboratory finding, one wonders whether the medical graduate of today is being taught to develop his powers of observation and perception that are so essential to the success of the practitioner of medicine. And may one not also ask to what extent the unnecessary use of these procedures is increasing the cost of hospital service?

What is needed is not less of science but rather more of human understanding. We need to imbue our students and graduates with the ideals of their profession and with the necessity of understanding that man is a social being and therefore that all illnesses and injuries have a definite social aspect.

Our hospitals have a definite responsibility in the solution of the difficulties confronting medical education. Our attending medical men must so develop their practice and teaching that the intern will regard the many modern aids to diagnosis as confirmatory evidence, essential to a degree in the serious or obscure case, but to be used with judgment and discretion and only after he has utilized to the utmost his God-given senses.

It is expected that when this comprehensive study is completed the commission will be in a position to indicate such changes in our present methods as will insure a development of the medical profession in accordance with the needs of the country for medical services. The hospital is sure to play a prominent role in that development. The lack of hospital and allied facilities in many districts is no doubt responsible for the dearth of physicians in those sections and through the expansion of these necessary services in the future we may hope for a better distribution of medical men.

Hospitals must recognize their responsibility toward education by providing organized instruction for the intern, in addition to the service which they demand from him; by fostering graduate instruction for their staffs and for the physicians in their vicinity through the development of intensive courses and programs that utilize the services of members of the faculties of the medical colleges, and through participation in the extension courses which are being promoted by a number of the state and local medical societies.

TALKING IT OVER

ARE you ready, Mr. Superintendent, to respond instantly to a call for help, should a disastrous railroad wreck, a building collapse, or a desolating fire occur in your community? Is the emergency box, containing dressings and medicines for at least fifty injured men or women, conveniently placed, and have the resident staff and ambulance chauffeurs been given instructions as to the location of the ambulance and its use, in case of urgent need?

It would seem wise not to rely on the occurrence of the need—when minutes might mean lives—before beginning to collect these necessary articles.

* * *

THERE is no surer way of creating and maintaining a high intra-hospital morale than the adoption by the superintendent of a policy of "talking over" with his co-workers any new departure in procedure, before the rule formally appears. The intention of the executive, and the reasons which make a new order necessary, are often imperfectly expressed in the cold, formal language of official instructions from the superintendent's office. The finest and most lasting response to an order of any sort is born of a full understanding on the part of those whom it affects of the reasons therefor.

* * *

LUCK is what the other fellow had. When somebody succeeds where we have failed, our wounded pride of self demands an alibi. We must prove to ourselves that our failure was due to causes outside our control. Luck was invented for just this purpose and it meets the specifications accurately. If we were unlucky, the responsibility for failure could not be ours; conversely, if some one else succeeds where we have failed, he deserves no particular praise because he had all the luck.

We are apt to pity unlucky people and if we are foolish, we will employ them, forgetting that ill-luck is often the product of poor judgment or sloth, or perhaps a combination of both. The lucky man is he who thinks hard, works hard and plays hard, who focuses his mental and physical strength on the job, who will accept no alibi for failure. In life, you've got to run all the bases to score.

* * *

THE following story was told by Irvin S. Cobb in an address before the United Confederate Veterans' meeting in reunion at Birmingham, Ala.: "After the Civil War a confederate surgeon returned to his home in a little country town and began the practice of medicine. Because of his unkempt and meager condition, the well-to-do's had small need of his services. But the needy knew and loved him because they realized that behind the gnarled hands that fought throughout the war was ability, and that beneath the tousled and twisted head was a skilled brain. This doctor, being of small means, could not afford a nice office; so he fixed himself up a little musty stand over a stable and down below he placed a board on the old hitching post, reading, 'Dr. Brown, upstairs.' But one morning his comrades looked for him in vain. They sought him in his office, and they found that the wrinkled hands had ceased to pick the coverlet, and the head was at rest on the pillow. Those who loved him were not wealthy people, but they buried him with honor and searched for funds to build a monument to him. The funds were not to be found among them, however. And then one of them had an inspiration. It was to take the old hitching post from the front of the stable and put it over the grave. This was done, and until the rain obliterated and the sun drew away the letters, the monument stood there, reading, 'Dr. Brown, upstairs'."

Might not a similar epitaph aptly serve for those members of the hospital field who have gone before? Surely they are all "upstairs."

* * *

THE shoemaker who said that women bear pain better than men had the right idea. In the days when women's skirts brought joy to the street sweeper's heart, the horrid deformities were occult but today it's all too different and any close observer on the street corner will find ample demonstration of the torture that fashion is inflicting. Men are somewhat better off but not much. The fact is that people treat their feet as though they could buy a new set at the corner drug store. They buy shoes by looking at the outside instead of the inside; they neglect their feet; they never exercise them; they disregard their protests; they maltreat them. The nurse has a splendid opportunity to spread the gospel of foot hygiene. Here is a place where she can make a real contribution to community health.

* * *

THE death of Carl Joseph Eberth in Berlin in December, 1926, serves to remind us how recent is our knowledge of the causal agents of infectious disease. In the ninety-two years of his life, Eberth did many great things but none was greater or added more to the welfare of man than his discovery of the typhoid bacillus in 1881, a discovery which Gaffky confirmed and worked out in detail. We are so familiar with this organism that we scarcely realize that we have known it for less than half a century, in fact typhoid fever, once the autumnal scourge, has almost become a curiosity, thanks to Eberth who blazed the trail towards its prevention and eradication.

* * *

THE mind of the sick is plastic wax ready and waiting to receive the lightest impression. An indiscreet word, a facial expression, the knowledge of a laboratory finding, any of these may stamp there a well-nigh ineradicable imprint. A patient who is told that he will not regain his strength for a year is quite apt to utilize the full time before he recovers. An anxious, lugubrious countenance has given many patients a set-back. The exhibition of x-ray plates and the recitation of laboratory findings makes many neurasthenics. It isn't the hospital's function to teach patients about their "insides;" as little Mary's mother wrote to the teacher, "It's rude and does no good." On the contrary, to cheer the sick, to increase their faith in recovery, to buoy their hopes, to implant no seed of neurasthenia in their minds, these are our proper functions.

* * *

THE man who surprised the lady in the bath and said "Good morning, sir!" was both courteous and tactful. More than this, his reactions were in good order. If he had thought a week he couldn't have been more apt. In fact, he didn't think; his higher centers had not time to function; he was confronted with a delicate situation which he had to handle right then. It was a reflex action. We who minister to the sick are constantly faced with crises that can be met only with prompt courtesy, tact and decision. To do this, we must maintain our reflexes at the highest level of efficiency so that they will almost automatically react with kindliness and accuracy.

The Modern Hospital Reading Course: Lesson III

WHY THE COMMUNITY SHOULD BE SURVEYED

By E. H. Lewinski-Corwin, Ph.D., Director, Hospital Information and Service Bureau, United Hospital Fund,
New York

WHAT are the hospital resources of this country? The answer to this question is contained in several national publications. In 1923 we had a census report on "Hospitals and Dispensaries,"[1] which, however, was incomplete, as many institutions did not reply to the questionnaire. THE MODERN HOSPITAL compiles annually information about the hospitals of this country, and the files of the American College of Surgeons and of the American Medical Association also contain detailed information about hospitals.

For the purposes of this paper, I am using the compilation which the Council on Medical Education and Hospitals of the American Medical Association has been publishing annually in the hospital number of the *Journal of the American Medical Association*. The table herewith reproduced appeared in the April 3, 1926, issue of the *Journal*. In this table the estimated population of each state is given, also the number of hospital beds in each state and these are grouped under four main divisions; general hospitals, hospitals for mental and nervous diseases, hospitals for those suffering from tuberculosis, and all other hospitals. Furthermore, the average utilization of the available bed capacity in each state is computed separately. From these figures the relation of beds to population can be easily ascertained. Taking the country as a whole we had, according to these figures, in 1926, one general hospital bed for every 386 inhabitants, one tuberculosis bed for every 2,310 inhabitants, one mental disease bed for 332 inhabitants, and one bed in the other special hospitals for every 960 inhabitants. Taking the entire hospital bed capacity of the country and dividing it into the whole population we obtain the average of one bed for every 141 inhabitants. We are evidently well supplied with hospital facilities. The question arises, however, whether the distribution and character of the hospital service are well adapted to the needs of each particular community.

In order to answer the question, we employ certain crude criteria. We say for example, that every community should have at least one bed for every 200 inhabitants for general medical and surgical cases, one bed for every annual death from tuberculosis for tuberculous patients, one bed for every 2,000 inhabitants for acute communicable diseases and one obstetrical bed for every primipara. These minimum standards are founded on an empirical basis and are useful for general purposes. In order, however, to provide facilities well adjusted to the needs of the particular community, a knowledge of certain vital statistics and of social and economic conditions is required. In this paper only a few of these economic conditions will be briefly touched upon.

Among the first approaches to the problem of community hospital needs is the composition and the occupations of the population. Our cities are growing rapidly because of the development of manufacturing enterprises, and the last Federal census showed for the first time in the history of the country an actual excess of urban over rural population. The increase in urban population has proceeded at a much faster pace than that of the rural sections of the country. While the city population increased 28.8 per cent during the decade from 1910-1920, the rural increased but 3.2 per cent during the same period. The cities attract young men and women from the countryside and subject them to an exacting environment in industrial pursuits. The industrial population has a

The Course Thus Far

THE survey to ascertain the hospital needs of the community according to the population served and the types of diseases that prevail is thoroughly discussed by Dr. Corwin in this, the third lesson of THE MODERN HOSPITAL Reading Course.

The two preceding lessons, appearing in the January and February issues of the magazine, dealt with "The Relation of the Hospital to the Prevalence of Disease," and "How to Incorporate a Hospital." The fourth lesson, which will appear in the April issue, will be on the subject of hospital finances.

1. Department of Commerce, Bureau of the Census, Washington, D. C., Government Printing Office, 1925.

TABLE I

Total Hospitals—Giving Number, Capacity and Average Number of Patients

State	Population, 1925	General			Nervous and Mental			Tuberculosis			All Other Hospitals			Totals			Total Cap. Including Bassinets	
		Hospitals	Beds	Av. Beds in Use	Hospitals	Beds	Av. Beds in Use	Hospitals	Beds	Av. Beds in Use	Hospitals	Beds	Av. Beds in Use	Hospitals	Beds	Av. Beds in Use	Bassinets	
Alabama	2,467,190	72	3,238	1,743	3	3,223	3,126	4	258	142	22	1,884	1,120	101	8,603	6,131	338	8,941
Arizona	407,702	21	846	484	2	692	681	20	580	348	40	2,302	1,439	83	4,420	2,952	103	4,523
Arkansas	1,852,905	53	2,567	1,425	3	2,512	2,478	1	310	298	13	1,504	851	70	6,893	5,052	97	6,990
California	4,021,320	281	18,147	12,529	32	15,398	14,407	39	2,871	2,219	138	10,912	6,243	490	47,328	35,398	2,174	49,502
Colorado	1,019,286	66	3,465	2,152	10	2,630	2,333	20	1,745	1,475	28	3,321	2,105	124	11,161	8,065	322	11,483
Connecticut	1,531,255	43	5,079	3,376	16	6,547	6,143	8	1,028	949	21	1,202	885	88	13,856	11,303	746	14,602
Delaware	234,720	8	526	264	2	750	626	2	80	62	3	65	28	15	1,421	980	77	1,498
Dist. Columbia	497,906	16	2,265	1,502	2	4,441	4,317	1	180	126	21	2,976	2,176	40	9,862	8,121	307	10,169
Florida	1,263,549	55	2,518	1,406	4	2,326	2,087	1	24	22	10	907	364	70	5,775	3,879	286	6,061
Georgia	3,058,260	68	3,856	2,183	5	4,810	4,729	2	272	254	24	1,928	1,107	99	10,866	8,273	330	11,196
Idaho	492,071	38	1,188	600	4	974	900	...	....	....	12	534	325	54	2,696	1,825	177	2,873
Illinois	6,964,950	236	21,456	14,468	30	24,366	22,512	21	2,631	2,316	93	6,507	4,321	380	54,960	43,647	2,824	57,784
Indiana	3,060,416	103	6,683	3,904	15	8,546	8,235	7	873	743	42	2,011	1,165	167	18,113	14,047	800	18,913
Iowa	2,505,569	140	6,911	4,209	15	8,268	7,770	6	615	453	36	1,527	934	197	17,321	13,366	846	18,167
Kansas	1,812,986	112	4,245	2,304	11	4,622	4,273	3	178	155	21	1,327	785	147	10,372	7,517	459	10,831
Kentucky	2,488,423	74	3,777	2,105	11	5,773	5,562	4	386	307	28	1,706	1,089	117	11,642	9,063	300	11,942
Louisiana	1,879,024	38	3,954	2,661	5	4,199	3,614	3	146	90	21	2,419	1,572	67	10,718	7,937	177	10,895
Maine	782,541	42	1,882	1,141	7	2,779	2,594	5	466	390	16	603	312	70	5,730	4,437	302	6,032
Maryland	1,537,085	36	4,214	3,101	17	5,281	4,862	10	2,055	1,378	30	1,662	966	93	13,212	10,307	461	13,673
Massachusetts	4,154,746	154	14,878	11,179	36	21,494	20,671	27	3,181	2,546	88	5,749	3,804	305	45,302	38,200	2,240	47,542
Michigan	4,154,625	143	10,354	7,225	16	13,266	12,543	17	1,800	1,416	52	2,719	1,705	228	28,139	22,889	1,338	29,477
Minnesota	2,563,550	145	8,910	5,720	13	7,795	7,188	19	1,926	1,524	55	3,050	1,976	232	21,681	16,408	1,023	22,704
Mississippi	1,790,618	52	2,239	1,220	3	2,884	2,774	2	254	335	9	736	568	66	6,383	4,897	162	6,545
Missouri	3,466,781	98	9,095	6,550	21	9,470	8,805	7	1,255	1,048	54	3,696	2,149	180	23,516	18,552	691	24,207
Montana	646,806	51	2,145	1,128	1	1,500	1,372	1	150	140	17	735	463	70	4,530	3,103	316	4,846
Nebraska	1,355,371	93	4,013	2,323	5	4,225	4,038	1	140	100	23	887	536	122	9,265	6,997	512	9,777
Nevada	77,407	14	407	194	1	300	222	...	....	....	10	206	112	25	913	528	42	955
New Hampshire	450,171	34	1,484	940	3	1,935	1,880	2	205	160	12	405	172	51	4,029	3,152	275	4,304
New Jersey	3,506,428	84	8,960	5,921	24	10,870	9,819	15	1,975	1,615	57	3,142	1,837	180	24,947	19,192	1,176	26,123
New Mexico	379,074	21	722	321	1	492	457	7	439	319	24	1,504	941	53	3,157	2,038	63	3,220
New York	11,162,151	294	36,546	26,313	60	52,355	50,486	65	8,139	6,690	211	18,088	11,930	630	115,128	95,419	4,964	120,092
North Carolina	2,759,014	88	4,113	2,348	11	4,761	3,954	25	1,145	886	29	1,978	1,287	153	11,997	8,475	411	12,408
North Dakota	686,424	36	1,574	1,058	2	1,420	1,309	1	110	90	13	310	112	52	3,414	2,569	191	3,605
Ohio	6,321,539	170	15,740	11,103	31	18,325	17,603	13	1,705	1,389	82	4,974	3,613	306	40,744	33,708	1,693	42,437
Oklahoma	2,238,536	81	2,997	1,541	6	3,915	3,773	5	380	287	21	1,050	696	113	8,342	6,297	209	8,551
Oregon	846,061	57	2,839	1,897	7	3,962	3,648	2	266	243	23	677	400	89	7,744	6,188	504	8,248
Pennsylvania	9,317,647	230	27,910	19,824	44	26,345	25,312	25	3,618	3,004	117	7,011	3,807	416	64,884	51,947	3,100	67,984
Rhode Island	679,260	18	2,202	1,558	4	2,276	2,149	2	461	362	14	817	441	38	5,756	4,510	278	6,034
South Carolina	1,779,084	35	1,973	1,024	3	2,905	2,811	6	248	207	18	449	178	62	5,575	4,220	190	5,774
South Dakota	681,260	37	2,087	1,285	2	1,825	1,695	1	96	88	18	649	379	58	4,657	3,447	205	4,862
Tennessee	2,424,616	57	4,192	2,651	10	3,852	3,506	7	1,755	1,380	27	1,112	700	101	10,911	8,237	330	11,241
Texas	5,097,574	159	8,326	4,813	15	8,515	8,141	20	1,524	1,138	50	3,248	2,088	244	21,613	16,180	666	22,279
Utah	492,478	26	1,244	822	2	782	756	...	....	....	10	147	64	38	2,173	1,642	132	2,305
Vermont	352,428	24	948	572	4	1,715	1,580	2	98	80	9	250	129	39	3,011	2,361	125	3,136
Virginia	2,449,443	62	3,927	2,381	10	6,265	6,104	7	837	766	34	2,768	1,695	106	13,797	10,946	377	14,174
Washington	1,478,214	80	4,860	3,145	8	5,052	4,708	8	741	607	39	2,516	1,404	135	13,169	9,864	712	13,881
West Virginia	1,601,130	54	3,363	1,899	3	3,160	2,964	4	374	334	8	306	219	69	7,203	5,416	267	7,470
Wisconsin	2,801,008	117	7,558	4,805	47	11,167	10,322	18	1,341	1,188	44	2,905	1,922	226	22,971	18,194	1,068	24,039
Wyoming	221,842	25	878	426	2	515	516	...	....	....	10	772	544	37	2,165	1,486	116	2,281
Total	113,493,720	4,041	293,301	193,743	589	341,480	322,342	466	49,131	39,669	1,797	118,153	73,608	6,896	802,065	629,362	34,511	836,576
Percentage of beds in use	.....	...	...	66	...	...	94	...	....	80.7	...	....	62	...	....	78		
Population per bed	.....	...	386	..	...	332	..	...	2,310	....	...	960	....	...	141			

Population given in column one is according to estimate for 1925 by the United States Bureau of the Census, except for Florida, Iowa, Kansas, Massachusetts, New York, Rhode Island, South Dakota and Wyoming, which took a state census in 1925. The number of beds and the average beds in use throughout the table are exclusive of bassinets, the number of which is given for each state in the column at the extreme right.

Statistics on other types of hospitals are included in table 8, page 1014, giving number, capacity, average beds in use and other data.

The hospitals of the Possessions of the United States, from which it was impossible to obtain complete data in time for this article, number as follows:

Alaska, 29 hospitals, 594 beds.
Canal Zone, 11 hospitals, 2,904 beds.
Hawaii, 47 hospitals, 3,210 beds.
Philippine Islands, 68 hospitals, 10,072 beds.
Porto Rico, 42 hospitals, 2,226 beds.
Total, 197 hospitals, 19,006 beds.

mortality two or three times greater than that of selected groups, such as graduates of women's colleges, clergymen or lawyers.[2]

In the United States no adequate method has been devised for the collection of statistics bearing on the effect of various occupations on morbidity and mortality. A number of excellent studies have been made under private and governmental initiative, to mention only the work of Dr. Edsall and his associates in Boston and of the United States Department of Labor and of the United States Public Health Service. Statistical monographs were published by F. L. Hoffman, L. I. Dublin and J. B. Andrews. Several medical treatises have appeared in the last decade, beginning with W. Gilman Thompson's "Occupational Diseases." Among these should be mentioned the works of Hayhurst, Kober, Alice Hamilton, and Harry Mock. In England, official cognizance is taken of mortality in relation to occupation. The following partial English table may be of service to indicate the effects of trade on mortality.[3]

TABLE II

Mortality Statistics Illustrating Occupational Hazards

	Causes	Phthisis	Diseases of respiratory system	Diseases of urinary system	Plumbism	Accident
All males	1,000	186	174	52	1	59
Agriculturist	585	172	121	38	0	38
File maker	1,609	367	315	152	58	42
Potter	1,540	285	473	53	10	33
Plumber	1,041	203	152	86	23	48
Tin miner	2,160	851	735	71	..	58
Stone, slate quarrier	896	186	202	39	..	97
Coal miner	939	98	261	31	..	136

From this table, it will be seen that the agriculturist is in a favored position, insofar as the effects of his occupation go, when compared with other occupations. The file maker suffers from plumbism and has also an extremely excessive mortality from diseases of the genito-urinary system; he also suffers heavily from respiratory diseases. The potter has a high death rate from

[2] Fiske, Eugene L. "Health Building and Life Extension," The Macmillan Company, New York, 1925, pp. 84-85.

[3] Hope, E. W. "Industrial Hygiene and Medicine," William Wood and Co., New York, 1923, p. 36.

respiratory diseases (including lung tuberculosis), as well as from lead poisoning. The plumber is subject to lead poisoning and lung tuberculosis; he shows, however, a low rate for diseases of the respiratory system. The tin miner has an extremely high mortality which is almost entirely the result of lung diseases. The stone and slate quarrier is subject to the same risks as the tin miner, but to a minor extent. As is well known, the coal miner is immune, to a large degree, from lung tuberculosis, but suffers from other forms of respiratory diseases. He likewise incurs a great risk from accidents.

With proper information of this kind, subdivided on an age group basis, one could estimate almost with accuracy the amount of morbidity and mortality in each community, provided the distribution of the entire population among the different industries were definitely known. It would seem that in planning community hospital provision, one has to take account of the particular industries of the community and to ascertain to what extent the industrial plants maintain hospital or clinic facilities of their own.

The prevalence of occupational morbidity and accidents varies in the same industries from community to community and from factory to factory in proportion to the care taken by the management to prevent the occurrence of disease and accidents. The efficiency of state or city factory inspection is also an important element in the situation. In estimating the probable extent of morbidity from occupational causes, one has to take these factors into consideration as well as the turnover of labor in the hazardous trades. The greater turnover of labor, the more likelihood there is of a greater accident rate and smaller rate of damage from exposure to particular industrial poisons, dusts and other irritants.

Age Distribution of Population

The age distribution of population is an important element in the consideration of hospital facilities. The following table showing percentage distribution of deaths at certain age periods for the expanding registration area, indicates first, the trend in mortality of each age group and also, indirectly, the prevalence of illness at the various age periods. It will be seen that the greatest reduction in mortality has taken place in the group of infants and children under five years of age. There was a similar proportional decrease in the age group from five to nineteen and a decrease in the group from twenty to thirty-nine. From forty years of age, each group shows an increased proportional death rate. It is evident from this table that the smallest hospital problem is that of the age group from five to nineteen, which in each city constitutes a different proportion of the whole population.

Women have better lethal rates than men, but there exists more illness among women than among men. It is evident from these considerations that the age and sex composition of the population is an important factor, insofar as need of hospital facilities are concerned. It is, therefore, imperative for a community hospital survey to ascertain the extent to which its population deviates from a "standard" population.

Need for Children's Services

With better hygienic methods of life and living, and community efforts to eradicate communicable disease, the need of provision for children's services in contagious disease hospitals as well as for certain other conditions is decreasing.

There exist differences of opinion as to whether certain types of children's diseases should be hospitalized, such as the feeding cases and cases of measles, for example. In a recent article, Dr. Joseph Brennemann, Chicago,[4] stated that the "out-patient department is the place in which to learn the great art of infant feeding. It is here that the normal baby is encountered, the 95 per cent that escape commitment to a hospital ward. Probably more than 95 per cent of all babies can readily be fed in a dispensary. In private practice, the need for a hospital hardly exists any longer for this class of cases. Nowadays, thanks to the infant welfare stations especially and to many other agencies, babies are kept well and the practitioner need hardly know in private practice the words athrepsia, intoxication, anhydremia, summer complaint, or dysentery. If he wishes to see these, he will find them in baby wards, often many more than are admitted as such. The intern who sees only hospital feeding is better taught next to nothing about infant feeding as he will encounter it in private practice. If he does not unlearn much, he will find himself shooting sparrows with a cannon. In the out-patient department, he will find the ideal training school for the simple feeding under normal conditions."

With regard to measles, it is interesting to note that the former policy on the part of the London health authorities of not hospitalizing measles has been changed recently. Because of its complications, the serious menace of measles to young life is being recognized and the Metropolitan Asylums Board has decided to make a larger allocation of beds for cases of measles.[5] With a proper aseptic

4. Brennemann, Joseph, "The Out-patient Department in the Teaching of Pediatrics," Journal of the American Medical Association, Nov. 20, 1926, pp. 1704-1706.
5. Journal of the American Medical Association, Nov. 13, 1926, London letter.

TABLE III

Per Cent Distribution of Deaths at Certain Age Periods for the Registration Area, 1900 to 1923

Year	Annual Death Rate per 1000 Population	Per cent of Deaths at All Ages (Exclusive of Stillbirths) Under 5	5 to 19	20 to 39	40 to 59	60 to 79	80 and Over	Unknown
1900	17.6	30.4	7.3	17.7	17.6	20.6	6.1	0.4
1901	16.5	27.3	7.0	18.2	18.8	21.8	6.5	0.4
1902	15.9	28.2	7.0	18.1	18.7	21.4	6.2	0.4
1903	16.0	26.7	7.1	18.3	19.0	22.0	6.4	0.4
1904	16.5	26.5	7.0	18.2	19.2	22.4	6.5	0.3
1905	16.0	27.0	6.8	17.9	19.2	22.5	6.5	0.2
1906	15.7	28.4	6.6	17.4	18.7	22.1	6.4	0.3
1907	16.0	26.7	6.4	17.5	19.2	23.1	6.9	0.2
1908	14.8	27.5	6.5	16.8	19.2	23.1	7.0	0.1
1909	14.4	26.8	6.1	16.4	19.1	24.2	7.3	0.1
1910	15.0	27.0	6.1	16.3	19.2	23.9	7.4	0.1
1911	14.2	25.0	6.1	16.6	19.6	24.7	7.6	0.1
1912	13.9	24.4	5.8	16.2	20.1	25.4	7.8	0.1
1913	14.1	25.3	6.1	16.1	20.0	24.8	7.6	0.2
1914	13.6	23.8	5.9	16.1	20.4	25.7	7.8	0.1
1915	13.5	22.4	5.7	16.0	20.8	26.8	8.2	0.1
1916	14.0	23.4	5.7	15.4	25.6	26.3	8.2	0.1
1917	14.2	23.7	6.1	16.0	21.6	27.1	8.0	0.1
1918	18.0	20.8	8.3	26.8	17.9	19.9	5.7	0.2
1919	12.9	20.9	7.1	18.7	16.3	25.4	7.8	0.2
1920	13.1	21.7	6.8	17.1	19.1	26.5	9.4	0.1
1921	11.6	21.3	6.8	14.6	19.7	28.3	8.9	0.1
1922	11.8	19.8	6.1	14.5	20.3	29.6	9.3	0.1
1923	12.3	19.6	5.9	14.1	20.3	30.0	10.1	0.1

technique and especially with a proper amount and character of nursing, medical care of measles in hospitals could be made effective and the complicating bronchopneumonias could be prevented. This has been effectively proved in the last few years at the Willard Parker Hospital, New York.

The racial composition of the population is an important factor in gauging the amount and character of hospital facilities in a given community. Dublin has shown that the lowest mortality rates are found in the native-born population of native parentage. The foreign born and their native-born progeny have similar mortality rates, higher than the native-born of native parents, with the exception of the age group from twenty-five to forty-four years of age.

The variations among the several racial elements are marked. Jews have very low rates, so have the Italians, except that at certain age periods Italian women succumb at a high rate to respiratory diseases. There is a high incidence of pulmonary tuberculosis among the Germans and the Irish, and likewise high rates from generative diseases. The Irish have a mortality about double that of the native stock. The British likewise have high death rates.[6]

To what extent the disease picture is different among the whites and negroes in the same environment can be seen from the comparison of mortality returns for the two races. In New York the mortality rates for pulmonary tuberculosis, pneumonia, heart disease and Bright's disease are much higher among the negroes and in some instances are four times the rate for the same causes for the whites.

TABLE IV

City of New York[1]

	Rates per 100,000 Whites	Rates per 100,000 Negroes
Pulmonary Tuberculosis	67	357
Cancer	109	97
Pneumonias	127	390
Heart Disease	237	331
Bright's Disease and Nephritis	62	82
Violence (includes Suicides)	95	160
All Causes	1,113	2,291

1. An interesting comment on this situation is found in the Weekly Bulletin of the Department of Health for June 5, 1926.

The distribution of income in the population, for more than one reason, is an important element in the hospital situation. It has been repeatedly shown that people in the lower rungs of economic stratification have a higher disease prevalence than those in the higher strata. The Illinois Health Insurance Commission made a study of a group of families to ascertain if there was any correlation between income and incidence of disease. They found that the percentage of families in which there was sickness increased directly with lower economic status.[7]

In a study made by the Public Health Committee of the New York Academy of Medicine, a similar attempt was made to ascertain facts on this point, and the following table gives signifi-

6. Dublin, Louis, I., "Factors in American Mortality," American Economic Review, September, 1916. "Mortality of Race Stocks in Pennsylvania and New York," Quarterly publication of the American Statistical Association, March, 1920.

7. For details of this study see pages 179 to 317 of the Report, published in 1919.

TABLE V[8]

Total Number of Families and Individuals and the Number and Type of Incapacity—Tabulated by Economic Groups

1918	Economic group	Weekly per capita income	Number of families	Number of individuals		Families having illness		Partial incapacity				Complete incapacity					
				Total No.	Aver. No. per family	No.	Per cent	Families in which it occurred No.	Per cent	No. of cases	Cases per 1,000	Families in which it occurred No.	Per cent	No. of cases	Cases per 1,000	No. of maternity cases	No. of cases per 1000 families
	A	Less than $4.50	166	969	5.8	142	85.5	74	44.6	124	128	101	60.8	239	247	44	265
	B	$ 4.51 to $ 6.50	488	2495	5.1	404	82.8	231	46.9	390	156	305	62.7	633	254	121	248
	C	$ 6.51 to $ 8.50	475	1995	4.	375	79.	224	45.2	361	181	271	54.7	562	282	100	202
NEW	D	$ 8.51 to $10.50	331	1216	3.6	236	71.3	128	38.6	178	146	171	51.6	300	247	59	178
	E	$10.51 to $15.50	253	788	3.1	173	68.4	98	34.7	132	167	114	45.	190	241	28	115
YORK	F	$15.51 to $20.50	57	170	3.	41	72.	19	33.3	30	177	29	50.8	49	288	9	158
	G	$20.51 plus	32	114	3.5	23	72.	12	36.8	17	149	16	50.	28	246	3	94
CITY	Income not determined		221	898	4.	147	67.	97	43.8	130	145	87	39.3	173	195	23	104
			2023	8645	4.3	1541	76.2	883	43.6	1362	157	1094	54.	2174	251	387	191

cant findings on the relation of incidence to income per family and individual.

No age group is so susceptible to environment as the infant group. R. M. Woodbury, Children's Bureau, Washington, D. C., has presented some interesting statistics on this point which were published in the *Journal of the American Statistical Association* in 1924. His table is reproduced here.

The distribution of wealth has a bearing on the family budget for health development and prevention of illness. This, in turn, bears a most direct relationship to the problem of hospitalization. The results of a study of budgets made by the United States Bureau of Labor Statistics[9] in the various parts of the country indicate how different are the proportions of the family budget for health for families of various levels of income.

This study of 12,096 families shows that invariably the average annual expenditure for sickness and death rises with the increase in the income per year. It is impossible here to go into details, but it may be of interest that, taking the aggregate figures, the average workman's family of 4.9 persons spends annually the following sums for the several items comprised in the bill for sickness and death:

Physician, Surgeon, Oculist	$37.33
Drugs	11.26
Nurse	23.66
Hospital	42.76
Dentist	$17.77
Eyeglasses	8.53
Other expenses	11.09
Undertaker	71.29
Cemetery	20.87

When it is considered that in 1918, the year for which the best data are available, about 86 per cent of persons gainfully employed had incomes of less than $2,000 per annum[10], the economic aspect of the hospital situation becomes self-evident. The bulk of the hospital patients is and will continue to be that of the ward type. The good repute which hospitals increasingly enjoy, coupled with the realization on the part of the public that the best service can be rendered only in a hospital, and the fact that the housing conditions in the large cities have made the care of the sick in homes almost impossible, has called for an extension of hospital facilities.

The increase in the hospitalization of lying-in cases is likewise worthy of note. The midwife is rapidly decreasing as an attendant at birth. In the 125,515 cases of births reported in the City of New York during 1926, only 21,068 or 16.7 per cent of the total births were attended by midwives, and in Chicago in 1925 of the total number of 59,639 births, 10,560, or 17 per cent of the total, were midwife cases. In the excellent reports of the Chicago Health Department for the years 1923, 1924 and 1925, figures are given for the number of births in hospitals and private homes.

TABLE VI

Infant Mortality Rates by Cause of Death and Earnings of Father

Earnings of Father per Annum	Live Births	Infant Deaths	Infant Mortality Rates[1]						Neonatal Mortality Rate[2]
			All Causes	Gastric-Intest. Diseases	Respiratory Diseases	Early Infancy	Epid. & Other Commun. Diseases	All Other Causes	
Total	21,536	2,368	110.0	32.3	19.2	35.9	6.8	15.7	44.4
Under $450	3,085	515	166.9	60.6	33.4	43.8	12.3	16.9	55.8
$450-$549	2,827	355	125.6	44.9	23.3	35.4	6.4	15.6	46.0
$550-$649	2,908	339	116.6	36.5	18.9	37.5	9.3	14.4	43.3
$650-$849	5,050	543	107.5	27.1	19.6	37.4	5.5	17.8	46.5
$850-$1,049	3,345	277	82.8	19.7	13.5	30.2	4.2	15.2	38.0
$1,050-$1,249	1,391	89	64.0	8.6	7.9	25.9	3.6	18.0	33.1
$1,250 and over	2,252	133	59.1	8.0	6.2	32.4	2.2	10.2	38.2
No Earnings	313	66	210.9	86.3	47.9	41.5	16.0	19.2	60.7
Not Reported	365	51	139.7	41.1	16.4	49.3	16.4	16.4	41.1

[1] Deaths under 1 year per 1,000 live births. [2] Deaths under 1 month per 1,000 live births.

8. "The Problem of Disease," Modern Medicine, March, May, July, September, 1920.
9. "Cost of Living in the United States," Washington, D. C., 1924.
10. Income in the United States, by the National Bureau of Economic Research, New York, Harcourt, Brace & Co., 1921, Vol. I. p. 146.

HOW SHOULD THE PROFESSIONAL STAFF BE REMUNERATED*

THE organization of the clinical departments of a hospital is intimately associated with the problem of the relationship of the professional staff to the hospital. The recompense that the men on this staff receive for their academic work and for their hospital responsibilities is gradually reaching a more rational and more satisfactory basis. It is fair to state that medical men have always been lavish in the amount of charitable work they have done. No one of us is worthy of his calling who is not glad to offer free service when he feels that a fee would be a burden on his patient. But most of us, I think, would prefer to have this a voluntary act.

The hospital has recognized that the ward patient shall pay what he can toward the expenses of his board and lodging. Many hospitals, especially those west of the Atlantic area, have taken the next step and allowed a small fee for professional services. This idea has not yet reached many of the eastern hospitals. The boards of managers feel that it is just to collect $3 or $4 a day from ward patients, but insist that there shall be no professional charge made to these patients. I think we all agree that the hospital should have the first lien, but it has always seemed a proper policy for a moderate fee to be paid for professional care by such ward patients as can afford it.

Additional Reward Needed

When no charge was made in the wards the physician was glad to give his services with no other recompense than the kudos that went with the position, the chance to enlarge his practice and the satisfaction of giving service. Under those conditions the time he spent in the hospital was usually not enough to interfere with an active outside practice. In many hospitals today this still holds true, but where the demands of the service are such as to require perhaps the major portion of the physician's time, some additional reward is not only just but is becoming necessary in order to attract and hold the type of men desired.

This recompense can be supplied either by providing facilities for private practice within the hospital or by a definite salary. Both methods are in vogue, sometimes not only in the same hospital but within the same service. Facilities for private practice should include not only the opportunity to make use of the private rooms, the operating room and the diagnostic laboratories, but also of the examining and consulting offices for ambulatory patients. Many hospitals are now paying definite salaries to the staff of the out-patient department. This has come about partly from a sense of justice but more often in order to meet the old laws of supply and demand.

Facilities for Private Practice

In the laboratory service of the hospital there is so little opportunity for remunerative private practice that if the hospital is to obtain the full services of men in these departments a reasonable salary must be paid. This has proved so necessary that some pathologists in charge of laboratories in non-teaching hospitals receive salaries higher than the professors of pathology in the medical schools. In the clinical departments it seems wiser to make it possible to adjust the method of financial reward to the needs or preferences of the individual. There are men, especially in the teaching hospitals, who desire to devote all their time and energy to hospital work. Some of them prefer a fixed salary; others would rather obtain their financial reward by individual private practice within the hospital.

In teaching hospitals the duties of the professional staff are broadening and demanding a group of individuals of different talents. The care of the patient, the teaching, the investigation of the mysteries of the art and science of medicine and the application of new principles or methods to the prevention and cure of human ills, must all be carried on by such a group. Each member should share in all of these activities, but there will always be wide variation in the relative proportion each individual is fitted for or interested in.

Men of Different Aptitudes Needed

The policy of such a teaching institution, therefore, should include in such a group, men of different aptitudes and interests and should be broad enough to allow an adjustment of recompense to the individual needs. To some the opportunity to carry on research work unhampered by the responsibilities of private practice is the most attractive life. It should be possible to reward such a man for his hospital service by a definite salary. For others, whose talents and interests lie more along clinical lines, opportunities for a reasonable amount of private practice offer the best reward. Such a policy permits men voluntarily to adjust their lives and to work more happily and efficiently than where a more fixed and narrow method is applied. Men usually do better when they may than when they must.

In the hospitals closely affiliated with medical schools the question of recompense has often been solved for the hospitals by the salaries these men receive from the medical school. In these teaching hospitals we are apt to find the individuals who prefer to devote all their energies to their hospital work, including, of course, the teaching responsibilities. A good deal of attention has been paid, in recent years, to this group of so called full-time clinical men, and many experiments are being tried in order to find out the best method of meeting the situation. The type itself is not new. For many years there have been clinical men who were so intent on the investigative side of clinical medicine, whether it was in the ward or in the laboratory or in both, that they devoted the major part, if not all, of their efforts to this work. The reason was "I want to," and not because someone said "Thou shalt!"

Opportunities for Investigative Work

In order to lead this life they voluntarily gave up the luxuries that a lucrative practice would have made possible for them, and were content with the sense of satisfaction to be derived from learning, and from working for themselves and for others. A few, perhaps, were influenced by a far-sighted vision and believed that if they applied themselves in this way a time would come when their services would be sought to such a degree that a harvest would result. At first the numbers of such men were few but others were quick to profit by their example, realizing the greater opportunities for investigative work if laboratory principles were applied to clinical problems. As their numbers increased they demanded a better solu-

*From the annual report of William Darrach, M.D., dean of the school of medicine, Columbia University, New York.

tion of the situation. To lead this sort of an existence in the older days one had to be either a single-minded enthusiast or possess private means. Before long it was realized that if hospitals, and especially teaching hospitals, were to obtain the services of men who desired to devote all their energies to the hospital, proper salaries must be provided for them. It soon became evident that to obtain and hold the services of the proper type of men for these positions the ordinary academic scale of salaries was insufficient. In the past few years the salaries paid to the full-time clinicians have increased rapidly. One effect of this has been to divert the stream of investigative minds from the fundamental departments toward the clinical departments. This drift had already begun to take place because of the opportunity for the combination of clinical and investigative work, but the tendency has undoubtedly been augmented by the increase in salaries.

This aspect of the so-called full-time problem is important and needs serious consideration by medical school administrators and men in the clinical departments, as well as by those in the fundamental departments. It is of interest not only to the physician but should be of interest also to hospital managers. Unless the staff of the laboratory departments can be consistently recruited with able, eager, young men, the future of the hospital is as seriously threatened as is that of the medical school.

The Problem of Recompense

It is logical to say that if the professor of Latin or of history can live respectably and raise his family on the usual academic salary, the same thing should be true of the professor of pathology or of bacteriology, and it is logical to make the same claim about the professor of medicine or of surgery. It may be logical, but at the same time it is impractical, if the men are unwilling to accept such an arrangement. It is usually accepted as true that if a man is to continue to teach philosophy he should philosophize, and that if he is to teach pathology then he must continue to practice pathology; if he is to teach medicine or surgery he must practice medicine or surgery. It also seems to be true that there is a certain amount of stress and wear and tear on the human mechanism involved in the practice of surgery or of medicine that is not present in the study of philosophy or of Latin or of Greek. The practice of medicine and surgery is a twenty-four hour job for seven days in the week and usually a good many more months in the year than are contained in the academic calendar. The same reasoning may be applied in the case of the pathologist or the bacteriologist as against the student and teacher of French or physics. Here may be found a good reason for men in these positions receiving more than the usual academic scale of salaries.

There is a method by which the situation can be somewhat simplified and perhaps helped. It is not a new method, being already in vogue in several places. In hospitals affiliated with medical schools it is accepted that the professional staff is serving two masters. The members of the staff receive academic appointments from the university and are responsible to them for their educational and research work. They also receive appointments from the hospital and are responsible to its board of managers for the professional care of the patients or for the responsibilities connected with the laboratories. It is reasonable that proper recompense should be made for each of these responsibilities. In the case of the hospital, such recompense can be offered in two ways: By the professional opportunities for private practice within the hospital, in return for which the individual physician has direct business dealings with the patient; or, in other instances, the hospital should pay an annual salary to the individual for the service he renders the hospital, whether this service is given in the wards or in the laboratories. The opportunities for private work in the laboratory departments are usually so limited as to be negative, and in most instances these men would naturally prefer and deserve a reasonable salary. If this principle is accepted by teaching hospitals and if at the same time the men in the laboratory departments can have the clinical opportunities they crave, a step forward will have been made in the administration of these departments.

PROVIDING FACILITIES FOR RURAL PRACTITIONERS

Referring to rural hospitals, the annual report of the Commonwealth Fund of New York, says:

"That rural communities, despite certain natural advantages, frequently afford a less satisfactory opportunity for healthful living than many of our cities; that the infant mortality rate in New York City, for example, is lower than for the state at large and that similar conditions exist elsewhere—these are established facts.

"The causes of such conditions are admittedly numerous and complex. Lack of a sufficient number of competent physicians in rural communities is undoubtedly a contributing factor which itself has many causes. In all the discussion of the subject, however, there appears one outstanding fact upon which all may agree. In many rural communities the physician finds little professional incentive either to establish himself or to remain. Lack of facilities with which to work, absence of stimulus and of means to improve both knowledge and technique drive many physicians to more promising and progressive locations.

"Among the most important needs in many such communities is that of a modern and well equipped hospital. Lack of reasonably available hospital facilities often means retarded medical progress. It has meant also that the numerous allied activities that a good hospital stimulates and of which it is the center, such as out-patient clinics, education of the people along health lines, adequate control of communicable diseases and sanitary control generally, have developed slowly and less effectively; and the value of the hospital as an educational force among the physicians, with all the attendant advantages to both physician and community, has been greatly missed. It is hoped that this new work may help to improve conditions of rural medical practice."

OCCUPATIONAL THERAPY AND THE CRIPPLED CHILD

In an article on "The Convalescence and Education of the Crippled Child" in *Bambino*, the official publication of the Children's Hospital of Columbus, Ohio, Dr. Robert B. Osgood, says in part: "Occupational therapy played an important role in the war and is applicable to any prolonged convalescence. There are schools which teach it and it has become a profession. It may be made directional therapy as well, and the bents and inclination of children and adults may be ascertained thereby. Thus, often before the child leaves the hospital the paths of study along which the individual will be most likely to travel far may be suggested. If this principle of education is applicable to those in normal health, how vastly more important it becomes in shaping the career of the cripple and cutting down his handicap."

NEWS OF THE MONTH

PENNSYLVANIA ASSOCIATION ANNOUNCES PROGRAM FOR MEETING

THE INTERN problem, social service, laboratory fees and the out-patient department are some of the subjects to be given an important place on the program of the sixth annual conference of the Hospital Association of Pennsylvania, to be held in Philadelphia, April 20, 21 and 22. As has been the custom in former years, an exhibition of hospital equipment and supplies will be held in conjunction with the meeting.

The program will open Wednesday afternoon, April 20, at 2 o'clock with the presidential address by Howard E. Bishop, superintendent, Robert Packer Hospital, Sayre. This will be followed by invocation by the Rev. Father Kehoe, Philadelphia, and the address of welcome by Dr. Wilmer Krusen, director of public health and charities, City of Philadelphia. Response will be made by Daniel D. Test, superintendent, Pennsylvania Hospital, Philadelphia.

The addresses will be followed by the reports of the treasurer, the board of trustees, executive secretary and the various committees. Following the meeting a reception will be held from 4 to 6 p. m. for delegates and friends, and the exhibits of hospital supplies and equipment will be open for inspection.

The evening session, which will take the form of a public meeting, will be featured by an address by Dr. Joseph H. Penniman, provost, University of Pennsylvania, who will be introduced by Dr. Joseph C. Doane, medical director and superintendent, Philadelphia General Hospital, Philadelphia. The program will also have a number of musical features by the University of Pennsylvania quartette.

Thursday morning's program will open at 10 a. m. with a discussion of the intern problem with reference to the method of appointing interns used in the Philadelphia hospitals, by John L. Burgan, superintendent, Abington Hospital, Abington. "The Problems of Securing Interns for the Small Hospitals" is the subject to be discussed by Mrs. E. B. Irwin.

Intern Problem to Be Discussed

Dr. Charles W. Mayo, Mayo Foundation, Rochester, Minn., has been asked to speak on the subject "Selecting a Hospital for Interns." "What the Medical School and Intern Committee Require of a Hospital for Proper Internship" is the subject assigned to Dr. William Pepper, dean, school of medicine, University of Pennsylvania, Philadelphia. These papers will be followed by open discussion on the advantages and disadvantages of a flat fee system for laboratories.

The afternoon session will be featured by two addresses, one by Dr. Theodore B. Appel, secretary of health, Commonwealth of Pennsylvania, Harrisburg, and another by Mrs. E. S. H. McCauley, secretary of welfare, Commonwealth of Pennsylvania. The subjects of these addresses will be announced later. The session will conclude with the report of the nominating committee and will be followed by an inspection of exhibits.

The evening session will be the annual association dinner scheduled for 7 p. m., at which Howard E. Bishop will preside. This session will be featured by an address by Captain Irving O. Hay, humorist, and music will be furnished by the University of Pennsylvania instrumental trio.

Friday morning's session will be devoted largely to a discussion of the social service and out-patient departments. The program will be opened by Lena Waters, director, social service department, Hospital of the University of Pennsylvania, and executive secretary, American Association of Hospital Social Workers, Philadelphia, who will speak on the subject "Relation of Social Service to the Hospital."

"The Relation of the Physician to the Social Service Department" will be discussed by Dr. William Stroud, Pennsylvania Hospital, Philadelphia. A paper will also be given on the relation of the hospital to the social service department and this will be followed by an open discussion.

"The development of the Out-Patient Department" is the subject of an address to be given by Michael M. Davis, Ph.D., executive secretary, Associated Out-Patient Clinics of New York, and to be discussed by Dr. G. Walter Zulauf, superintendent Allegheny General Hospital, Pittsburgh.

The meeting will be followed by a luncheon at 1 p. m., and the afternoon session, which will open at 2, will be given over to association business.

DIRECTORS NAMED FOR NURSES' PENSION SYSTEM

The proposed plan of a system of pensions for retired nurses, a preliminary announcement of which appeared in the December issue of THE MODERN HOSPITAL, has taken definite shape with the incorporation of the Harmon Association for the Advancement of Nursing, Inc. Within the next few weeks the association will have its headquarters established and will be prepared to take measures to put the system of annuities into effect.

William E. Harmon, president, Harmon Foundation, which made an initial grant of $50,000 to set the fund in motion, is president of the organization and Samuel McCune Lindsay, economic adviser to the foundation, is its vice-president. Clyde Furst, Carnegie Teachers' Pensions System, will be treasurer, and Edith M. Burdick, a nurse, will be assistant treasurer. James I. Coddington and Mary B. Brady, Harmon Foundation, are secretary and assistant secretary, respectively.

The board of directors includes the officers and a group of men and women nationally known in nursing, hospital,

and health work. The group includes Dr. Nathan B. Van Etten, Morgan J. O'Brien, John M. Glenn, Lillian D. Wald, M. Adelaide Nutting, Michael M. Davis, Dr. Haven Emerson, Felix M. Warburg, Dr. John E. Jennings and Barry C. Smith.

An executive committee has been empowered to arrange with one of the large insurance companies to put a pension plan into effect soon.

NORTH CAROLINA ASSOCIATION HOLDS ANNUAL MEETING

Problems of hospital administration and nursing and a symposium on workmen's compensation featured the meeting of the North Carolina Hospital Association held at the Charlotte Hotel, Charlotte, January 18-19. Consideration of the matter of consolidation with the South Carolina Association was postponed until the next meeting. The next meeting of the association will be held at Newbern, the time to be decided by the executive committee.

The following officers were elected: President, Dr. C. S. Lawrence, Winston-Salem; first vice-president, Lula West, Mt. Airy; second vice-president, Nina Davidson, Durham; and secretary-treasurer, Dr. L. V. Grady, Wilson.

Dr. J. R. Alexander, Charlotte, president of the association, chose as the text of his address a phrase of the Biblical quotation "Further Light," and applied the theme to hospital administration. He interpreted the first light essential to good hospital administration as system, the second light as cooperation and the third as love.

Dr. W. S. Rankin, director of hospitalization, Duke Endowment Fund, Raleigh, explained the program of the endowment, pointing out that it was aiming to build hospitals in country districts with the hope of attracting practitioners to these districts. He said that while the endowment gives aid to charity institutions only, under the present arrangement, it aims to help private hospital owners to dispense with institutions that are not on a paying basis and eventually to replace them with modern efficient institutions. He believes that in the future it will no longer be considered the province of individuals privately to carry on the work of hospitals and that hospitals will be public institutions.

One of the principal addresses of the meeting was "Essential Principles in Hospital Administration," by Dr. Malcolm T. MacEachern, associate director, American College of Surgeons, hospital activities, Chicago, who outlined the six principles as organization, coordination, economy, efficiency, service and humanity.

The symposium on workmen's compensation consisted of discussions from the following standpoints: The patient, by Dr. L. V. Grady; the hospital, by Dr. J. T. Burrus, High Point; the physician, by Dr. Harold Glascock, Raleigh; labor, by Harry Fentress, Charlotte, and insurance, by J. Lawrence Jones, Charlotte.

An address on the curriculum of nursing schools was given by Elizabeth Burgess, dean, nursing department, Teachers College, Columbia University, New York.

Other papers of the meeting were: "The Special Duty Nurse," by Margueritte Andell, Roper Hospital, Charleston, S. C.; "Teaching in the Small Schools of Nursing," by Lulu West, Mt. Airy; "Some Experiences Gained in Equipping a Modern Hospital," by Miss E. A. Kelly, superintendent, Fayetteville; "Deep X-Ray Therapy," by Dr. W. D. James, Hamlet Hospital, Hamlet; "Selling the County Hospital to the County," by Dr. James Moss Beeler, superintendent, Spartanburg General Hospital, Spartanburg; "The Intern in the Modern Hospital," by F. O. Bates, superintendent, Roper Hospital, Charleston, S. C., and "Caring for the Negro Race in the Good Samaritan Hospital," by Emma Hall, Good Samaritan Hospital, Charlotte.

Greetings were brought to the association from the American Hospital Association, by Dr. Bert W. Caldwell, superintendent, Gordon Keller Memorial Hospital, Tampa, Fla.

The meeting was followed by a sectional meeting of the American College of Surgeons for the two states of North and South Carolina.

PLAN MERGER OF HOSPITALS FOR TEACHING CENTER

Announcement has been made of the amalgamation of George Washington University Hospital, Garfield Memorial Hospital, and the Washington Home for Foundlings, Washington, D. C. According to the agreement, the Washington Home for Foundlings will build a cancer hospital and cancer research laboratory on the grounds of Garfield Hospital.

George Washington University plans to build a new medical school nearby, and the work of the George Washington University Hospital will be transferred to the new center. Plans will be undertaken immediately for the erection of the cancer hospital and laboratories to be known as the Helen L. and Mary E. Warwick Memorial in recognition of the $500,000 bequest made for this purpose. With the completion of the new construction the hospitals and the nurses' homes will be reorganized.

COMING MEETINGS

American Hospital Association.
President, Dr. R. G. Brodrick, Highland Hospital, Oakland, Calif.
Executive secretary, Dr. William H. Walsh, 18 East Division Street, Chicago.
Next meeting, Minneapolis, Minn., October 10-14, 1927.

American College of Surgeons.
President, Dr. W. W. Chipman, Montreal.
Director General, Dr. Franklin H. Martin, 40 E. Erie St., Chicago.
Next meeting, Detroit, Mich., October 3-7, 1927.

American Medical Association.
President, Dr. Wendell Phillips, 40 West 47th St., New York.
Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago.
Next meeting, Washington, D. C., May 16-20, 1927.

Hospital Association of the State of Illinois.
President, Dr. Paul W. Wipperman, Decatur and Macon County Hospital, Decatur.
Secretary, Joseph F. Miller, Methodist Hospital of Central Illinois, Peoria.
Next meeting, Chicago, May 5-6, 1927.

Indiana Hospital Association.
President, Dr. M. F. Steele, Hope Methodist Hospital, Fort Wayne.
Secretary, Missouria Martin, Muncie Home Hospital, Muncie.
Next meeting, Evansville, April 7-8.

Hospital Association of New York State.
President, Dr. George B. Landers, Highland Hospital, Rochester, N. Y.
Secretary, Edgar C. Hayhow, New Rochelle Hospital, New Rochelle.
Next meeting, Syracuse, May 26 and 27, 1927.

Ohio Hospital Association.
President, A. E. Hardgrove, City Hospital of Akron, Akron.
Secretary, Robert G. Patterson, 72 S. Fourth St., Columbus.
Next meeting, Columbus, April 5-6, 1927.

Pennsylvania, Hospital Association of.
President, Howard E. Bishop, Robert Packer Hospital, Sayre.
Secretary, John M. Smith, Hahnemann Hospital, Philadelphia.
Next meeting, Philadelphia, April 20, 21 and 22, 1927.

American Protestant Hospital Association.
President, Robert Jolly, Baptist Hospital, Houston, Texas.
Secretary-treasurer, Rev. Frank C. English, Christ Hospital, Cincinnati.
Next meeting, Minneapolis, Minn., October 8, 9, 10, 1927.

INTERESTING PROGRAM PLANNED FOR OHIO MEETING

A program embracing many subjects that are foremost among current hospital problems is being prepared for the thirteenth annual meeting of the Ohio Hospital Association, to be held at Columbus, April 5-6.

According to tentative plans, Tuesday morning, April 5, will be given over to registration, committee meetings and a meeting of the board of trustees, and at the informal luncheon at noon, the annual address of the president will be read by A. E. Hardgrove, superintendent, City Hospital of Akron, Akron.

The afternoon program, which will be presided over by Alice P. Thatcher, superintendent, Christ Hospital, Cincinnati, vice-president of the association, will consist of a number of papers and discussions of topics of vital importance to hospitals. A paper dealing with the subject of cooperative buying in the state, its advantages and disadvantages and what articles should be included in such buying, will be given by Guy J. Clark, purchasing agent, Cleveland Hospital Council, Cleveland. This subject will then be discussed by Byron W. Stewart, superintendent, Youngstown Hospital, Youngstown, and Dr. Charles E. Holzer, surgeon in charge, Holzer Hospital, Gallipolis.

A. E. Hardgrove, superintendent, City Hospital of Akron, president, Ohio Hospital Association.

A paper on "The Relation of the Hospital Staff to the Organization of the Hospital," will be presented by Dr. W. W. Brand, Toledo, and discussed by Dr. J. H. J. Upham, Columbus, who will represent the American Medical Association; by Dr. Malcolm T. MacEachern, Chicago, representing the American College of Surgeons; and by the Rev. A. G. Lohman, superintendent, Deaconess' Hospital, Cincinnati.

"The Value of the Women's Auxiliary Board to the Hospital," is the subject of a paper to be read by Mrs. Margaret Simons, Dayton, and to be discussed by A. O. Bauss, general superintendent, Children's Hospital, Akron.

The dinner session, to be presided over by A. E. Hardgrove, president, will bring up for discussion the two important subjects of the function of the board of trustees in the hospital organization and the obligation of the hospital to the intern. The first subject will be handled by Samuel Mather, Cleveland, and Mrs. Truitt B. Sellers, Columbus. The other subject will be discussed by Dr. A. C. Bachmeyer, superintendent, Cincinnati General Hospital, Cincinnati; Dr. E. F. McCampbell, dean, medical college, Ohio State University, Columbus, and by Dr. C. A. Hamman, dean, medical college, Western Reserve University, Cleveland.

A round-table breakfast is scheduled from 8:30 to 11 o'clock, Wednesday morning, at which Mary E. Yager, superintendent, Maternity and Children's Hospital, Toledo, will preside. The subjects to be discussed at that time include such topics as laboratory service for non-hospital patients; physiotherapy, insurance, occupational diseases, and orderlies' time.

Suggestions as to subjects or speakers for the round-table breakfast will be welcomed by Miss Yager.

This session will be followed at 11 a. m. by a business session devoted to the reports of officers and committees. The report of the treasurer will be presented by the Rev. Maurice F. Griffin, St. Elizabeth's Hospital, Youngstown; the report of the audit committee, by J. R. Mannix, Elyria Memorial Hospital, Elyria; the report of the committee on resolutions, by A. O. Bauss, Akron; the report of the committee on membership, by C. A. Brimmer, superintendent, Mansfield General Hospital, Mansfield; the report on nominations, by Mary A. Rostance, superintendent, Warren City Hospital, Warren; and the report of the committee on policy, by A. E. Hardgrove, Akron. The meeting will adjourn at 11:30.

OFFERS TWO PRIZES FOR DISCOVERY OF NATURE OF CANCER

Two prizes of $50,000 each have recently been offered by William Lawrence Saunders, director of the Federal Reserve Bank of New York, for discoveries of the causation, prevention and cure of cancer. The offer will stand for a period of three years, with probable renewal at the end of that period.

Information as to how persons should proceed to present their discoveries for consideration will be announced later and the decision upon which the awards are to be made is to be determined by the American Society for the Control of Cancer and be approved by the American Medical Association and the American College of Surgeons.

ADVANCED SUMMER COURSE OFFERED FOR GRADUATE NURSES

An advanced course in nursing education is to be offered during the summer school at the Colorado State Teachers' College, Greeley, Colo. The course will extend from June 14 to July 20 and is designed primarily as advanced work for administrators, instructors, public health nurses and private duty nurses, and is open only to graduate nurses.

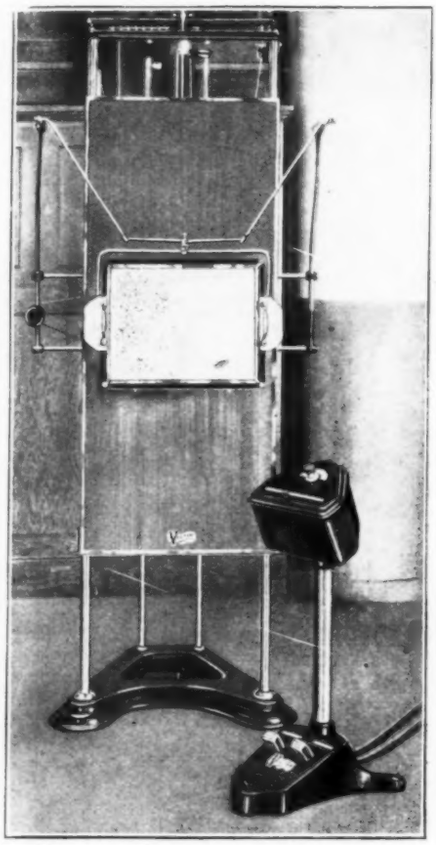
Carolyn E. Gray, R.N., Teachers' College, Columbia University, New York, will be in charge of the course, which is sponsored by the Colorado section of the National League of Nursing Education in cooperation with the college.

Rapid-Fire Radiography at the Fluoroscopic Screen

with the

Victor "Fluorographic" Control Unit

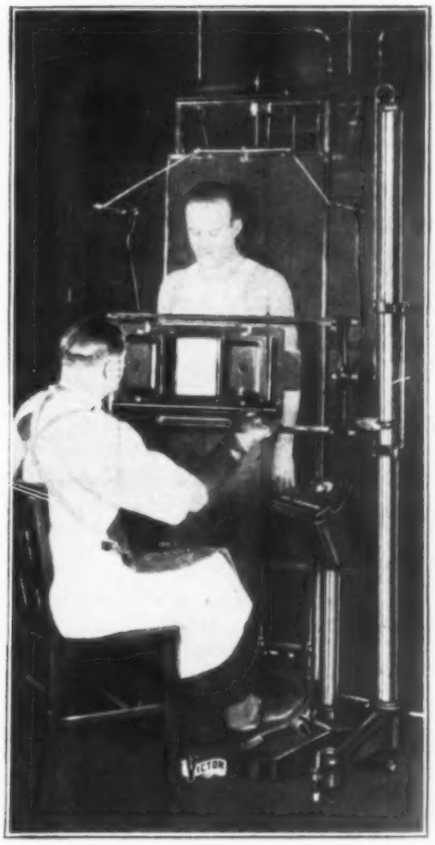
(Patents Pending)



Used with the Vertical Roentgenoscope. The operator inserts cassette back of the screen when a radiograph is desired of some pathology observed fluoroscopically. The control can be used similarly with a combination table, thus increasing the range to horizontal and angular, as well as vertical, fluoroscopy and radiography.

A Unit with which the operator may change instantly from a Fluoroscopic to a Radiographic Current and back again to Fluoroscopy, simply by foot levers, and without having to leave his position at the screen; also with means for selective control of voltage and milliampereage of the Fluoroscopic Current.

The "Fluorographic" Control Unit proper is connected to auto-transformer of main X-ray machine and X-ray timer. Cuts in and out of main circuit by simply throwing a wall switch.



Used in combination with the Serial "Fluorographic" Unit and Vertical Roentgenoscope. The magazine with six loaded cassettes permits shifting a cassette instantly into position back of the screen, following which pressure on the right foot lever produces the radiograph—exposure being timed automatically.

From a well-known roentgenologist: "For many years roentgenologists have wished for an apparatus that would make a roentgenogram instantly of exactly the thing they were able to see on the fluoroscopic screen, and this new device certainly accomplishes this. It is certainly a great addition to our equipment."

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Diagnostic and Deep Therapy Apparatus. Also manufacturers of the Coolidge Tube

VICTOR

PHYSICAL THERAPY
High Frequency, Ultra-Violet, Sinusoidal, Galvanic and Phototherapy Apparatus

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Personals

DR. BYRON E. BIGGS, assistant medical director, University of Michigan Hospital, Ann Arbor, Mich., has been appointed superintendent, Hurley Hospital, Flint, Mich., succeeding LOUIS M. TEFFEAU, resigned. Dr. Biggs has been given a four months' leave of absence from the university hospital.

DR. E. F. HEISKELL has been named superintendent and resident physician of the City Hospital, Morgantown, W. Va.

DR. J. L. RESSLER has been elected medical superintendent of the Lancaster County Asylum and Hospital, Lancaster, Pa., succeeding DR. W. F. MYLIN, resigned.

MARY L. WHITAKER and MINNIE BLAUVELT, superintendent and assistant superintendent, respectively, of the Irvington General Hospital, Irvington, N. J., have resigned. A. CHARLES ERN, a member of the board of the hospital, has been appointed purchasing agent by Mayor David H. Greene.

ETHEL SHERMAN has resigned as superintendent of the University of California Infirmary, Berkeley, Calif. She is to be succeeded by MISS C. G. BROWN, head nurse of the hospital, who will be head of the nursing staff and by MRS. M. E. CALDER, who will be in charge of the dispensary. Miss Sherman has been superintendent of the Infirmary for the past twenty years.

RUTH GARDNER CLARK, R.N., has resigned as superintendent of the Orange Memorial Hospital, Orange, N. J., on account of ill health. She has been superintendent of the institution for the past six years.

DR. G. R. SMITH, Ely, Nevada, has been appointed superintendent, Nevada Hospital for Mental Diseases, Reno.

ADELAIDE M. LEWIS, R.N., superintendent, Kewanee Public Hospital, Kewanee, Ill., for the past five years, has resigned. After a short rest at her home Miss Lewis will visit several hospitals in different parts of the country to study administrative methods.

DR. D. A. CRIST, formerly superintendent, Dayton State Hospital, Dayton, Ohio, and recently superintendent, St. Mary's Hospital, Milwaukee, Wis., has returned to private practice at Dayton.

MELISSA M. DAILEY has resigned as superintendent of the Woman's Hospital, Saginaw, Mich.

MRS. CHARLES SENECAL is superintendent of the Oriskany Falls Private Hospital, Oriskany Falls, N. Y.

DR. RAYMOND C. MEYER has been appointed medical director of the new Sheboygan County Tuberculosis Sanatorium, Sheboygan, Wis.

DR. JOHN H. BERRY, Athens State Hospital, Athens, Ohio, has been elected president of the association of superintendents of state institutions of Ohio. DR. W. H. PRITCHARD, medical superintendent, Columbus State Hospital, Columbus, has been elected secretary.

HELEN WESSEL has resigned as superintendent of the Monmouth Hospital, Monmouth, Ill.

CAPITOLA YOUNGSTROM, head of the Swift County Hospital, Benson, Minn., for the past three years, has resigned. She will be succeeded by CORA M. COCHRANE, formerly superintendent, Caledonia Hospital, Caledonia, Minn.

MARY MEYERS has been appointed superintendent of the County Hospital, Greeley, Colo., succeeding MRS. W. E. TINES.

MARTHA DERRICK has resigned as superintendent of the Johnson City General Hospital, Johnson City, N. Y. She will be succeeded by MERCY MOE.

SISTER VERA has been appointed head of St. Joseph's Hospital, Logansport, Ind., where for the past eight years she has been head of the x-ray department.

ANTOINETTE M. MORRIS has resigned as superintendent of the King's Daughters' Hospital, Waycross, Ga. She is succeeded by SUE WILKINS, R.N.

DR. H. F. SPILLERS, superintendent, Ohio Valley Hospital, Wheeling, W. Va., is the new president of the Hospital Association of West Virginia.

MRS. GEORGE HARMELING is the new superintendent of the King's Mountain Memorial Hospital, Bristol, Va. JULIAN P. MOORMAN has been appointed business manager of the institution succeeding CHARLES WEINGARTNER, who recently disappeared.

DR. J. E. PRITCHARD, who for the past several years has been assistant superintendent of the Manitoba Sanatorium, Ninette, has resigned to join the staff of the department of pathology of the Winnipeg General Hospital, Winnipeg, Man.

DR. WANN LANGSTON, University of Oklahoma Medical School, has temporarily succeeded PAUL H. FESLER as superintendent of the State University Hospital, Oklahoma City, Okla.

MARY L. OVERTURF, R.N., formerly assistant principal of nurses, Cleveland City Hospital, Cleveland, has been appointed superintendent of nurses at Lake County Memorial Hospital, Painesville, Ohio, to succeed MRS. GRACE H. BOND, resigned.

VADA WILCOXEN is the new superintendent of the Monmouth Hospital, Monmouth, Ill. She has been superintendent of the Graham Hospital, Canton, Ill., for the past two and one-half years. She will be succeeded by IDA A. HAHAN, R.N., formerly with the Methodist Hospital, Peoria.

DR. J. WALLACE SMITH, formerly director of student health, Kalamazoo Normal College, Kalamazoo, Mich., is the assistant physician at the Niagara County Tuberculosis Sanatorium, Lockport, N. Y. MRS. GRACE ECKERT, formerly superintendent, Berks County Sanatorium, Reading, Pa., is the new head nurse.

SISTER CHERUBIA, superior at St. Joseph's Hospital, Logansport, Ind., has been transferred to St. Joseph's Creighton Memorial Hospital, Omaha, Neb., to succeed SISTER SILVERIA, deceased.

MRS. ARVILLA FECKLER has resigned as superintendent of the J. B. Thomas Hospital, Peabody, Mass.

DR. E. L. HOOPER has been appointed superintendent of the Orient Hospital for the Feebleminded, Orient, Ohio, succeeding DR. W. H. VORBAU, resigned. Dr. Hooper has been first assistant physician at Athens State Hospital, Athens, Ohio, since 1919.

Appetizing Dishes For "Diet-tired" Patients!

Patients placed upon a diet, especially a liquid diet, often find food monotonous —and their appetites grow lazy. Physicians and dietetic authorities have found Knox Sparkling Gelatine of great value in making diets more appetizing, more nourishing, more beneficial. Knox Gelatine combines with all kinds of fruits and juices, and, with colloidal ability, aids their digestion.

Why Knox Sparkling Gelatine is Best in Every Way for Hospital Use

Each 5-pound package of Knox Sparkling Gelatine makes 120 quarts of jelly, or 1440 generous servings. A comparison of these advantages with any other brand proves that Knox Gelatine is not only best but also most economical in every way for hospital use. A trial 5-pound package at $1.50 a pound will be sent to any hospital direct upon request.

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"The Highest Quality for Health"

The Staff of every hospital should have the Knox General Recipe Books and Special Bulletins: Liquid and Soft Diets, with recipes; a Study of the Nutritive Value of Gelatine, by Thomas B. Downey, Ph.D., and the Treatise on Diabetic Diet, with recipes. Advise us how many you require for the Staff and we will forward them postpaid.

Free from harmful acidity, artificial coloring, and synthetic flavoring.

Charles B. Knox Gelatine Laboratories **400 Knox Ave., Johnstown, N. Y.**

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EDITH M. SUTHERLAND has been named superintendent of the new Bayshore Hospital, Miami, Fla.

DR. JOHN N. SNOKE, assistant director, Johns Hopkins Hospital, Baltimore, Md., is the new superintendent of the Bryn Mawr Hospital, Bryn Mawr, Pa. He was formerly at St. Luke's Hospital, Shanghai, China. He will be succeeded by DR. FRANK M. HOUCK, formerly superintendent, Cragmor Sanatorium, Colorado Springs, Colo.

ISABEL BENNETT, Newark City Hospital, Newark, N. J., is the new assistant superintendent, Irvington General Hospital, Irvington, N. J.

NELLIE ROGERS is the superintendent of Hopewell, the new tuberculosis hospital, Smithsonia, Ga.

THERESA KRAKER, associate director, National Organization for Public Health Nursing, New York, has resigned her position to join the Division of Rural Hospitals of the Commonwealth Fund.

ALPHA F. BLACK, R.N., is the new superintendent of the City-County Hospital, El Paso, Texas.

DR. THEODORE B. APPEL has been appointed director of the State Department of Health of Pennsylvania, to succeed DR. CHARLES MINER. Dr. Appel was formerly medical director of the Lancaster General Hospital, Lancaster, Pa., from 1906-1920.

MRS. E. S. MCCAULEY, Beaver, Pa., has been appointed director of the State Department of Welfare of Pennsylvania succeeding DR. ELLEN C. POTTER.

DELLA DELONG, R.N., formerly superintendent, Silver Cross Hospital, Joliet, Ill., has returned to Grace Hospital, Detroit, Mich., as head supervisor, succeeding OLIVE SEWELL, R.N., who accepted the position of directress of nurses at the Sparrow Hospital, Lansing, Mich. Miss DeLong was formerly operating room supervisor at Grace Hospital.

DR. WILLIAM MILES GARRISON has been named superintendent of the new Belmont Sanatorium, St. Clairsville, Ohio.

MRS. CHARLES PUCKETT is now superintendent of the Hoyland Hospital, Paris, Tenn.

DR. W. L. PATTERSON, for the past eleven years, assistant superintendent, Fergus Falls State Hospital, Fergus Falls, Minn., has been appointed to succeed DR. GEORGE WELCH as superintendent of the institution.

STELLA GOOSTRAY, formerly head of the educational department, Philadelphia General Hospital, Philadelphia, is now superintendent of nurses at the Children's Hospital, Boston, Mass.

DR. CHAUNCEY W. DOWDEN has resigned as superintendent of the West Baden Springs Hospital, West Baden, Ind., to establish private practice in Louisville, Ky.

DR. ORRIN J. RIDDELL, JR., has been appointed in charge of the laboratory and roentgen ray departments at the Alhambra Hospital, Alhambra, Calif.

DR. H. H. PITTS, Cleveland Clinic, Cleveland, Ohio, is the new pathologist at the Vancouver General Hospital, Vancouver, B. C.

GROUP NURSING PROJECT DISCUSSED AT CHICAGO NURSES' MEETING

Group nursing and what is being accomplished by this method in Chicago was the subject of discussion at the luncheon meeting of the First District of the Illinois State Association of Graduate Nurses, held in Chicago, February 7.

The meeting was presided over by Nellie M. Crissy, president. Janet M. Geister, director, American Nurses' Association, New York, opened the discussion. The results of the first attempts at group nursing in Chicago were presented by Minnie H. Ahrens, executive secretary, and director of the Nurses' Club and Registry, Chicago, who said that the results of group nursing during the month of January had been more successful than was anticipated and that a profit of fifty dollars had been realized through this type of service. Others who participated in the discussion were Dr. Malcolm T. MacEachern, associate director, American College of Surgeons, hospital activities, Asa S. Bacon, superintendent Presbyterian Hospital, Chicago, Dr. William H. Walsh, executive secretary, American Hospital Association, and M. Helena McMillan, director, School of Nursing, Presbyterian Hospital.

SESQUICENTENNIAL EMERGENCY HOSPITAL CLOSES

The Sesquicentennial Emergency Hospital, conducted during the past summer as a branch of the Philadelphia General Hospital, to care for the sick and injured visitors to the exposition, has just closed after a busy season.

Five thousand six hundred and fifty-one patients were treated during the period of the exposition. The staff consisted of four physicians and five nurses.

The hospital was awarded a medal of honor for its services to the public, by the International Board of Award, and Dr. Joseph C. Doane, director, and S. Lillian Clayton, supervising nurse, were also awarded individual medals by the same board for their services in making the work of this hospital a success.

ANNOUNCE A. H. A. COMMITTEES

Appointments to the various committees of the American Hospital Association for this year have been made by Dr. R. G. Brodrick, president of the association, and director, Highland Hospital, Oakland, Calif. The committees are as follows:

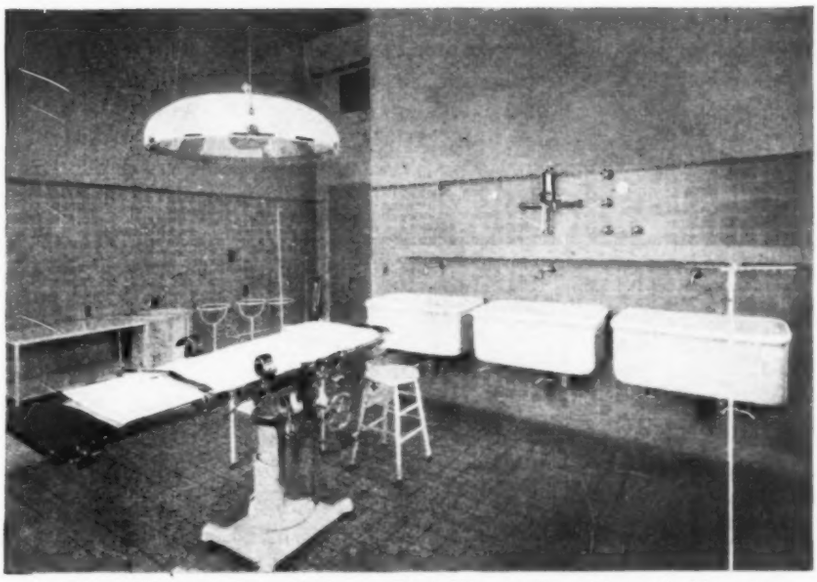
Constitution and Rules: Chairman, Richard P. Borden, trustee, Union Hospital, Fall River, Mass.

Resolutions: Chairman, Bert W. Caldwell, M.D., superintendent, Gordon Keller Memorial Hospital, Tampa, Fla.; G. W. Olson, superintendent, California Lutheran Hospital, Los Angeles, Calif.; George F. Stephens, M.D., superintendent, Winnipeg General Hospital, Winnipeg, Man.

Legislative: Chairman, E. T. Olsen, M.D., superintendent, Englewood Hospital, Chicago; Walter H. Conley, M.D., general medical superintendent, Department of Welfare, New York; W. P. Morrill, M.D., superintendent, Columbia Hospital for Women, Washington, D. C.

Nominating: Chairman, John M. Peters, M.D., superintendent, Rhode Island Hospital, Providence, R. I.; E. R. Crew, M.D., superintendent, Miami Valley Hospital, Dayton, Ohio (1926-1927); Carolyn E. Davis, R.N., superintendent, Minor Hospital, Seattle, Wash. (1927-1928); John D. Spelman, M.D., superintendent, Touro Infirmary,

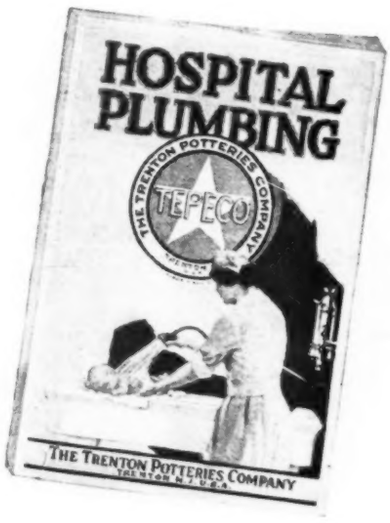
A Te-pe-co Hospital Infant Bath with Drain Shelf. An indispensable fixture in maternity wards.



Installation of Te-pe-co in the new Northwestern Hospital Operating Room, Minneapolis, Minnesota

Besides its normal functions, the construction of this Te-pe-co Hospital Closet includes a Bed Pan Jet, operated by a separate mechanism.

TE-PE-CO All-Clay Plumbing Fixtures meet the exacting requirements of Hospital Plumbing. The Te-pe-co Line was designed only after exhaustive investigation and consultations with the leading surgeons and experts.



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Membership: Chairman, Louis H. Burlingham, M.D., superintendent, Barnes Hospital, St. Louis, Mo.; Herman L. Fritschel, superintendent, Milwaukee Hospital, Milwaukee, Wis.; Herman Smith, M.D., superintendent, Michael Reese Hospital, Chicago.

Out-Patient: Chairman, Michael M. Davis, Committee on Dispensary Development, United Hospital Fund, New York; J. L. McElroy, M.D., University Hospital, Iowa City, Ia.; Donald C. Smelzer, M.D., superintendent, Charles T. Miller Hospital, St. Paul, Minn.

Accounting and Records

Accounting and Records: Chairman, A. C. Bachmeyer, M.D., superintendent, Cincinnati General Hospital, Cincinnati.; Frank E. Chapman, director, Mount Sinai Hospital, Cleveland; G. W. Curtis, superintendent, Santa Barbara Cottage Hospital, Santa Barbara, Calif.; Mary A. Jamieson, R.N., superintendent, Grant Hospital, Columbus, Ohio; T. R. Ponton, M.D., superintendent, Hollywood Hospital, Hollywood, Calif.

Public Health Relations: Chairman, D. L. Richardson, M.D., superintendent, Providence City Hospital, Providence, R. I.; A. J. Chesley, M.D., Minnesota Department of Health, St. Paul, Minn.; R. G. Leland, M.D., Public Health Association, Toledo, Ohio; Alvin Powell, M.D., Alameda County Public Health Center, Oakland, Calif.; W. S. Rankin, M.D., director, Duke Endowment, Charlotte, N. C.; W. C. Rucker, M.D., surgeon in charge, U. S. Marine Hospital No. 14, New Orleans, La.

Intern Advisory: Chairman, Nathaniel W. Faxon, M.D., director, Strong Memorial Hospital, Rochester, N. Y.; Charles C. Bass, M.D., Tulane University School of Medicine, New Orleans, La.; Frederick C. Bell, M.D., Vancouver General Hospital, Vancouver, B. C.; William Darrach, M.D., Columbia University, College of Physicians and Surgeons, New York; McKim Marriott, M.D., Washington University School of Medicine, St. Louis, Mo.; I. D. Metzger, M.D., State Board of Medical Education and Licensure, Harrisburg, Pa.; L. S. Schmitt, M.D., director of hospitals, University of California, San Francisco, Calif.; F. A. Washburn, M.D., director, Massachusetts General Hospital, Boston; Neal N. Wood, M.D., superintendent, Los Angeles General Hospital, Los Angeles, Calif.

Training of Executives

Training of Hospital Executives: Chairman, Edward A. Fitzpatrick, Graduate School, Marquette University, Milwaukee, Wis.; Asa S. Bacon, superintendent, Presbyterian Hospital, Chicago; C. C. Burlingame, M.D., Joint Administrative Board, New York; E. S. Gilmore, superintendent, Wesley Memorial Hospital, Chicago; Edgar C. Hayhow, superintendent, New Rochelle Hospital, New Rochelle, N. Y.; Malcolm T. MacEachern, M.D., associate director, American College of Surgeons, hospitals activities, Chicago; Ada Belle McCleery, R.N., superintendent, Evanston General Hospital, Evanston, Ill.; Willard C. Rappleye, M.D., director of study, Commission on Medical Education, New Haven, Conn.

Buildings—Construction, Equipment and Maintenance: Chairman, S. S. Goldwater, M.D., director, Mount Sinai Hospital, New York; Grace E. Allison, Samaritan Hospital, Troy, N. Y.; E. Muriel Anscombe, superintendent, Jewish Hospital, St. Louis, Mo.; A. C. Bachmeyer, M.D.; Asa S. Bacon; C. C. Burlingame, M.D.; John J. Dowling, M.D., Boston City Hospital, Boston; Alice Shepard Gilman, R.N., State Board of Nurse Examiners, Albany, N. Y.; A. K. Haywood, M.D., superintendent, Montreal General Hospital, Montreal; John D. Spelman, M.D.; Wiley E. Woodbury, M.D., superintendent, Fifth Avenue Hospital, New York.

Simplification and Standardization of Furnishings, Supplies and Equipment: Chairman, Margaret Rogers, R.N., superintendent, St. Luke's Hospital, St. Paul, Minn.; Charles F. Neergaard, New York; David C. Shepard, St. Luke's Hospital, St. Paul, Minn.; Sister M. Veronica, R.N., Mercy Hospital, Chicago; G. Walter Zulauf, M.D., Allegheny General Hospital, Pittsburgh, Pa.

Dietary Service and Equipment: Chairman, Rena S. Eckman, Warren State Hospital, Warren, Pa.; Howard E. Bishop, superintendent, Robert Packer Hospital, Sayre, Pa.; Mary A. Foley, Kahler Corporation, Rochester, Minn.; E. M. Geraghty, Lakeside Hospital, Cleveland; Sister Helen Jarrell, St. Bernard's Hotel Dieu Hospital, Chicago; F. R. Nuzum, M.D., Santa Barbara Cottage Hospital, Santa Barbara, Calif.; Lottie B. Sloan, Lane and Stanford University Hospitals, San Francisco, Calif.

Clinical and Scientific Equipment and Work: Chairman, Lewis A. Sexton, M.D., superintendent, Hartford Hospital, Hartford, Conn.; B. W. Black, M.D., U. S. Veterans' Bureau, Washington, D. C.; Annette B. Cowles, superintendent, Children's Free Hospital, Louisville, Ky.; John A. Lichty, M.D., superintendent, Clifton Springs Sanitarium and Clinic, Clifton Springs, N. Y.; C. H. Pelton, M.D., superintendent, St. Luke's Hospital, Chicago; L. B. Rogers, M.D., St. Francis Hospital, San Francisco, Calif.

Committee on County Hospitals

County Hospitals: Chairman, C. W. Munger, M.D., Grasslands Hospital, Valhalla, N. Y.; Carl E. McCombs, M.D., Bureau of Municipal Research, New York; Joseph R. Morrow, M.D., Bergen County Hospital, Ridgewood, N. J.; J. H. Southmayd, Division of Rural Hospitals, Commonwealth Fund, New York.

Smithsonian Institution Exhibit: Chairman, Winford H. Smith, M.D., superintendent, Johns Hopkins Hospital, Baltimore, Md.; Richard P. Borden; Daniel D. Test, superintendent, Pennsylvania Hospital, Philadelphia.

Workmen's Compensation: Chairman, Richard P. Borden; Joseph C. Doane, M.D., medical director and superintendent, Philadelphia General Hospital, Philadelphia; Cornelius S. Loder, New York; Frank S. Shaw, trustee, Presbyterian Hospital, Chicago.

Insignia: Chairman, John F. Bresnahan, M.D., superintendent, St. Mark's Hospital, New York; Howard H. Johnson, M.D., superintendent, St. Luke's Hospital, San Francisco, Calif.; John A. Lapp, National Catholic Welfare Conference, Chicago; Luther H. Lewis, New York; Alfred C. Meyer, trustee, Michael Reese Hospital, Chicago; Katherine M. Prindiville, Lawrence and Memorial Associated Hospital, New London, Conn.; Marvin Z. Westervelt, M.D., Staten Island Hospital, Tompkinsville, N. Y.; George F. Stephens, M.D.

WOMEN'S HEALTH CLINIC OPENED BY MEDICAL COLLEGE

The Women's Medical College of Pennsylvania, Philadelphia, has opened a health clinic for women under the direction of the department of preventive medicine. The purpose of the clinic is to foster health, to discover incipient illness and to direct cases to the various special clinics. The clinics are held every Friday afternoon and are in charge of Dr. Edith V. H. Matzke of the Women's Medical College.

CRANE VALVES

150 Pounds Pressure *2500 Pounds Pressure*

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REVIEWING THE OBJECTIVES OF THE FIVE-YEAR GRADING PROGRAM*

By Joseph C. Doane, M.D., Medical Director and Superintendent, Philadelphia General Hospital, Philadelphia

RECENTLY I was given the opportunity of reading the report of the five-year program of the Committee on the Grading of Nursing Schools. If one were not in any way acquainted with the current problems of nursing and schools of nursing, he would immediately be reassured of the seriousness of this effort when he scans the personnel of the committee submitting this report. It is composed of representatives of seven national organizations concerned with the betterment and progress of the practice of medicine and nursing. In addition, the committee has six members at large who represent not only the educational field, but the general practitioner, the patient and the hospital. Accordingly, one cannot but be impressed by the fact that the approach to this probelm has been considered from all angles.

What could be more significant of an absence of bias and antagonism and the presence of an intense desire to know the truth concerning this problem and of a courage to face the situation, whatever the findings, than this concluding statement in the introductory note: "The committee plans to keep its cards on the table, face upward." There is also a distinct note of altruism in the first statement in the preface to this report: "The future of the nurse is of more interest to others than to the nurse herself." It appears, therefore, that if the spirit expressed in these two somewhat epigrammatic statements is maintained during the studies outlined in this report, none will dispute that from a practical standpoint the work is founded on a sound basis.

Problem of Large Dimensions

Now, so far as the practicability of laying down a five-year program is concerned, certainly the problem to be studied is of sufficient dimensions to require a most thorough and painstaking examination from every angle. In the past decade so many abortive and superficial efforts have been made to solve the many vexing problems in professional and educational fields, that these surveys and the conclusions drawn therefrom appear, not infrequently, ridiculous. But apparently, the Committee on the Grading of Nursing Schools not only visions the size of the problem but appreciates the difficulties that are likely to be encountered in making the correct diagnosis of the disease, if such exists, and the application of a rational and intelligent treatment.

As one progresses in the perusal of this report, he is impressed by the fact that at least the committee members of the associations participating in this work are willing to lay aside all bias, suspicion and spurious group pride, and wholeheartedly endeavor to work toward the one end of learning what is wrong with the nursing situation and deciding what to do about it. The committee has considered this problem from three angles and has laid down a definite period of time for the intensive study of each of these divisions, with an estimation of the amount of money which such an intensive examination will cost.

It is stated that the doctor has been largely concerned with the quantity, the nurse with the quality, and the public with the cost of nursing. While this statement may be true in the majority of cases, it cannot be said that the doctor and the public have always been satisfied with the quality of nursing, nor that the nurse has only concerned herself with this single attribute.

The function of this study as interpreted by the committee is, "the study of ways and means for insuring an ample supply of nursing service of whatever type and quality as needed for the adequate care of the patient, at a price within his reach."

To the uninitiated, the statement that this study will require an expenditure of $200,000 and five years in time, can have but one reaction, that of surprise. To the informed physician, hospital executive, general duty or public health nurse, or superintendent of a nurse training school, there comes less of doubt as to the need for this expense in time and money, but rather a feeling of uncertainty as to whether either will be sufficient for the solution of such a vexing difficulty.

Question of Supply and Demand

For example, if the question of supply and demand of nurses could be fully understood after an expenditure of two years in time and $42,000, none would dispute the wisdom of this expense. Or, if a decision could be reached as to the kind of nurse required and the ways and means by which she can be prepared, though it required a two-year study and an expenditure of $72,000, the result would be considered cheap at the price paid. And, if all of the 2,000 or more schools of nursing could be fully standardized with an elevation of the effectiveness of their courses, even a year's study and an expenditure of $86,000 does not seem an exorbitant price to pay.

It is refreshing to note the attitude of optimism with which the committee mentions the dissatisfaction of physicians with the present nursing situation and the question of nurses' fees. I have always been under the impression that the physician was unduly concerned with the amount of money which the nurse charged for her work, and that the average practicing physician failed to appreciate either the fluctuation of the amount of work which the nurse could secure or everyday living expenses.

The report appears somewhat critical concerning the type of teaching now in vogue in the schools of nursing in this country. One who has not made a study of this matter has no right even to express an opinion as to the truth of these criticisms. There is, however, no doubt that the teaching of nurses is in many cases more or less casual and that the nurse spends more of her time in nursing than in being taught to nurse.

On the other hand, great credit must go to schools of nursing in smaller hospitals, where finances are at a low ebb and where all are straining every nerve to fulfill the prime function of the hospital, the care of patients. One wonders concerning the truth of the statement that most instructors in schools of nursing in this country know better what to teach than how to impart this information. When it is considered that the instructor of nursing in the small school may also be the head nurse of a department or even the sole graduate nurse who assists in a supervising capacity, one wonders whether this person, who may be a product of the school in which she is teach-

*Doctor Doane's review is based on the recent report issued by the Committee on the Grading of Nursing Schools.

Left—Columbia Presbyterian Medical Center, N. Y. James Gamble Rogers, Arch, Marc Eidlitz & Sons, General Contractors.
Right—Beth Israel Hospital, N. Y. City. Louis Allen Abramson, Arch. G. Richard Davis Co., General Contractors.

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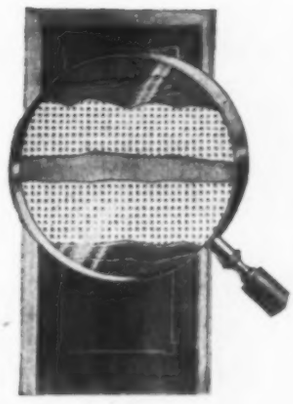

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ing, is better informed on such matters than she is on pedagogic principles.

It would not be surprising to learn that the chief difficulties that the committee will encounter will be found in the job analysis study. From the theoretical standpoint, there is no doubt that criticisms of methods of teaching in the nursing schools of the country are amply justified and there is no doubt also that the amount of time the student nurse is required to give in actual care of the patient is out of proportion to that devoted to classroom, laboratory and other academic work. Here one comes up against a practical situation, the mention of which has been, as far as the writer has observed, omitted from the committee's report. Granted that the hospital should not look upon the school of nursing as an economic asset in the same degree that it does, the hospital must face the problem that has been discussed in many nursing, medical and hospital programs, namely, how can the nurse be properly instructed and the hospital still be able to care for its patients?

The discussion of the six attributes mentioned as necessary for the successful nurse seems to be somewhat lengthy and irrelevant, insofar as the purpose of the report is concerned. The nurse must have manual skill, leadership, persistence, knowledge of her duties, keenness and intuition. God only can impart four of these attributes and the teacher in the training school can often feebly inculcate the remaining two. No change in the nurses' curriculum would impart generally the majority of these much desired qualities.

Success Measured by Actual Grading

Insofar as the aim of the report is concerned, the actual grading of schools will constitute the success or failure of the whole effort. To pattern this attempt on the method employed by the American College of Surgeons or the American Medical Association appears to be a wise move, but I would recommend that the committee's activities arranged in the five-year course be centered in bringing about in the hospital field a recognition of a need for improvement in teaching facilities and methods and a desire for help from the outside rather than in creating a feeling that the schools of nursing were about to be reformed in spite of themselves.

No good can come from such a study, and particularly when the results are practically applied to any of the hospital's activities, unless the boards of directors of these hospitals, the superintendent and the superintendent of nurses can be convinced of the existence of the need and of the good intention of those offering help. To survey 2,300 hospital schools of nursing each year is a colossal job. To learn much concerning each hospital in a two-day study is, to say the least, no less an undertaking. To secure twenty qualified workers, with poise, tact and technical skill in studying a school will be most difficult.

I have observed the reaction in the minds of hospital people when unqualified inspectors, whose very personality failed to gain respect, arrived on the scene with pencil and pad and proceeded to measure the hospital, usually from the superintendent's office, without having either the ability or the breadth of vision to gain in so short a period of time any true estimate of the hospital and its work.

One doubts also the wisdom of relying too much on questionnaires, since only the most conscientious schools will fill out these blanks carefully and thougthfully. Any walk of life, however, shows much carelessness and inaccuracy in answering questionnaries.

Some other ways may exist to make a direct inspection of the school, by which a committee can gain the accurate information that it desires, but there does not appear to me to be any other method than a personal visit by which the aims, morale and ethics of the individual hospital can be learned.

Finally, one cannot but be impressed by the fact that the studies of this committee, as expressed in its report, will result in a thoughtful and comprehensive survey of the nursing problem. This report does not pretend to offer a solution at this time, nor does it even more than hint at the difficulties it will encounter as the studies progress.

The report, no doubt, will be criticised by some as being too idealistic, but in this era of materialistic manifestations, ideals may well precede a realization of the ends to be gained. There is also much virtue in the definiteness with which the committee has set forth its program, both from the standpoint of the time to be consumed and actual money to be expended. The committee's efforts will bring forth, it is hoped, a favorable response on the part of men and women of wealth who realize the good that should result from the consummation of this work.

One cannot but feel, however, that the preliminary report of the committee could have been expressed in somewhat fewer words, with a sparing of an occasional homely illustration that appears to detract slightly from the dignity of the report. No doubt the practical financial side of nursing schools insofar as they affect hospitals will be fully considered as the study goes forward. The difficult work in any large standardized plan such as is contemplated by the committee requires that standardization of the remedy will, of course, require standardization of the disease, and that the only specific treatment for educational difficulties is education itself—education of communities and of hospital personnel, not neglecting the superintendents of hospitals, the directress of nurses and the public.

I am old-fashioned enough, perhaps, to have felt somewhat disappointed because the patient, that person concerning whom "it is all about," has received so little mention in the committee's report. However, to one who has heard, in the past decade, so much bickering and expressions of false and ill-considered opinion concerning the trouble with the nursing situation, and the solution thereof, it is both refreshing and encouraging to have had an opportunity to study the preliminary report of the committee. There must and will come from its efforts a great good, provided that it continues in its expressed belief that "the future of the nurse is of more interest to others than to the nurse herself" and proceeds calmly but persistently in its studies "with all cards on the table, face upward."

A. H. A. INSIGNIA COMMITTEE APPOINTED

A committee of eight members has been appointed to represent the American Hospital Association in making the final choice of insignia to be used by the hospitals of the continent as a symbol of hospital service, with recommendations as to its use, under a copyright to be held by the association.

The committee is composed of Dr. John F. Bresnahan, superintendent, St. Mark's Hospital, New York, chairman; Dr. Howard H. Johnson, superintendent, St. Luke's Hospital, San Francisco, Calif.; John A. Lapp, director of social action. National Catholic Welfare Conference, Chicago; Luther H. Lewis, New York; Alfred C. Meyer, Michael Reese Hospital, Chicago; Katherine M. Prindiville, Lawrence and Memorial Associated Hospital, New London, Conn.; Dr. Marvin Z. Westervelt, Staten Island Hospital, Tompkinsville, N. Y., and Dr. George F. Stephens, superintendent, Winnipeg General Hospital, Winnipeg, Man.

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EDUCATIONAL OPPORTUNITIES OF HOSPITALS STRESSED AT MEDICAL CONGRESS

WHAT is expected of the hospital as a teaching center was the theme of the second session of the annual meeting of the Council on Medical Education and Hospitals of the American Medical Association, held at the Palmer House, Chicago, February 15. The meeting was held as a part of the annual A. M. A. Congress on Medical Education, Medical Licensure and Hospitals.

One of the papers that was of much interest to hospitals was "The Hospital Function in Graduate Medical Education," presented by Dr. N. P. Colwell, secretary, Council on Medical Education and Hospitals, Chicago. The paper outlined the advancement that hospitals have made in medical education during the past twenty-five years and the opportunities that hospitals now offer the intern. Dr. Colwell pointed out that in 1906 only six schools out of 162 had hospital privileges for medical graduates. On the contrary, the situation that exists today is a shortage of interns caused partly by the fact that higher entrance requirements and the extension of the medical course has raised the average intelligence and character of students and partly because the quantity of hospitals has developed with greater rapidity than the supply of interns.

Positions as Resident Physicians

Attention was directed to the opportunity that is now being afforded to medical graduates as resident physicians in hospitals where they can pursue the study of a specialty with the abundance of practical experience offered by the hospital. The function of the hospital as a center of medical education for practitioners of the community and for public health nurses and social workers who may be educated in disease prevention was also emphasized by Dr. Colwell. In conclusion he brought out that the extension of the hospital's service in the future would be in the field of research by means of which diagnosis is rendered more accurate and methods of treatment are constantly improved.

"The Duty of the Hospital Staff to the Intern," was the subject of the paper read by Dr. George E. Follansbee, chief of staff, St. Alexis Hospital, Cleveland, who stressed the ethical side of the hospital's teachings. "Hospitals should teach the intern the ethical duties he owes his brother practitioners as well as the patients and the public," said Dr. Follansbee, "and should teach him to be charitable in his judgment of other physicians and to realize that other hospitals have as good a staff as his own."

Dr. Follansbee denounced the hospital staff meeting that is used as an opportunity for a member of the staff to exploit the acuteness of his diagnosis or the brilliancy of his treatment. When the staff meeting concerns itself with discussing the outstanding achievements of a member it defeats its purpose, according to Dr. Follansbee, for it is from a careful analysis of the failures of practice that the value of such meetings come.

He pleaded with chiefs of staff and staff members not to crush the zeal of interns who come from medical schools with scores of new ideas borne of the latest developments in medical science and need practical experience to supplement their theoretical training.

"The Teaching Value of Postgraduate Clinics and Programs," was the subject of a paper by Dr. Walter L. Bierring, secretary-treasurer, Federation of State Medical Boards of the United States, Des Moines, Ia., who pointed out the great opportunity for service the hospital has in conducting clinics of various types and in promoting, in cooperation with local health agencies, community health programs. That the hospital is the logical agency to take the initiative in promoting such clinics was brought out clearly by Dr. Bierring.

What the hospital can do in informing physicians of the new methods of diagnosis and treatment and preventive work was outlined by Dr. Charles A. Gordon, chairman, committee on public helath and medical education of the Medical Society of the State of New York, Brooklyn, in a paper, "Taking Medical Education to the Practitioner."

"Graduate Medical Education in Europe in 1926," was the subject of a paper by Dr. Louis B. Wilson, director, Mayo Foundation of Medical Education and Research, Rochester, Minn., who compared European and American medical conditions, pointing out the advantages which this country has with respect to medical education.

The subject of physical therapy in the hospital was handled by Dr. Frank B. Granger, physician-in-chief for physical therapy, Boston City Hospital, Boston, who directed attention to the need for establishing physical therapy alongside the other therapies in the hospital and discussed the organization of this department.

One of the outstanding papers of the congress was the preliminary report of the Commission on Medical Education, presented by Dr. Willard C. Rappleye, director of study, New Haven, Conn., who outlined the work that the commission is undertaking and its bearing on the educational function of the hospital. The objectives of the program of the commission are set forth in the article by Dr. Rappleye, which appears on page 80 of this issue of the magazine.

STANDARDIZATION CONFERENCE TO BE HELD IN DETROIT, OCTOBER 3-7

The annual hospital standardization conference of the American College of Surgeons will be held at the time of the Clinical Congress in Detroit, Mich., the week of October 3, immediately preceding the American Hospital Association convention to be held in Minneapolis, Minn., October 10-14, thus making it convenient for hospital representatives, physicians, nurses, and others to attend both meetings.

The Book-Cadillac and Statler Hotels will be used as headquarters, the registration headquarters to be at the former hotel. Full details of all arrangements will be announced later.

The program for the meeting, now under way, promises to be the most interesting and practical that has ever been presented by the college, according to Dr. Malcolm T. MacEachern, associate director, hospital activities. In addition to the many new features there will be a continuation of discussion in the form of round-table conferences on the nursing, industrial, and other problems presented last year in Montreal. A symposium, possibly followed by a special demonstration, in a Detroit Hospital, will be presented on "the care of the patient of moderate means," a subject of particular interest at this time.

The entire program will aim at the discussion of problems actually confronting the hospital field, particularly those relating to the professional care of the patient.

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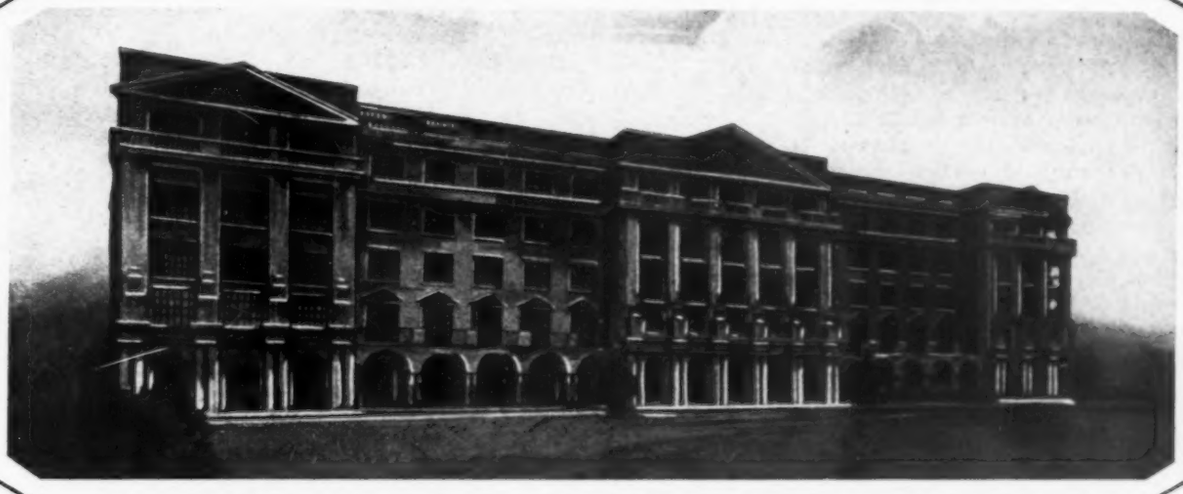

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ADMINISTRATIVE PROBLEMS GIVEN PROMINENCE AT METHODIST CONFERENCE

SPECIFIC problems of administration and their solution was the keynote of the papers and discussions of the hospital department of the annual convention of the National Methodist Hospitals and Homes Association, held at the Edgewater Beach Hotel, Chicago, February 16-17.

The attendance was one of the largest that has ever been witnessed at the annual convention and the various hospitals, homes and deaconess institutions had many representatives from various parts of the country. Sectional luncheon meetings were held both days at which the various groups interested in a particular kind of work gathered to discuss their problems. An interesting exhibit of photographs showing the various types of work and what is being accomplished in the hospitals, homes and deaconess institutions was held in connection with the meeting.

The hospital meeting opened with a devotional period after which it was given over to hospital administrative problems. The main address of the afternoon was given by the Rev. J. A. Diekman, president, Bethesda Hospital, Cincinnati, who spoke on the subject "Problems of Hospital Administration" in place of Dr. L. M. Riley, superintendent, Wesley Hospital, Wichita, Kas., who was scheduled for this paper but was unable to be there.

Mr. Diekman outlined seven problems of hospital administration, choosing as the first the relationship of the medical staff, which he deems is one of the big problems of most hospital superintendents. He believes that in order to obtain and keep the right type of men on the staff that joint cooperation is needed between the members of the staff and the members of the board of trustees. In his hospital this responsibility is delegated to a joint committee consisting of four members from the board of trustees and three from the hospital staff and this committee passes on the men who seek admission to the staff. In this way undesirables are eliminated with a minimum of hard feeling.

Relations of Board of Trustees

With respect to the relations of the board, he said that he believed that the board had its legitmate sphere in controlling the finances and improvements and directing the broad policies of the hospital and that in no way should it be concerned with detail management. He said that a great deal of the friction that exists between the boards of trustees and the hospital proper is the result of interference of the board in matters about which it should have no voice. He believes that the best way of promoting cooperation between the board of trustees and the medical staff is for the hospital to have annually or more often a joint banquet for the staff and board.

In discussing the intern problem, he brought out the difficulties that his hospital experiences in securing the desirable type of men and of managing them after they obtain them. He said that his experience had been that a great many interns do not look upon the year of training in the hospital as a part of their education but as so much time that has to be put in before they can practice. He believes that the responsibility rests with both the medical school and the hospital to help the intern to have the right attitude toward this year, which is logically the fifth year of his medical education. The training which hospitals give in routine record keeping in this year, he said, cannot be overlooked and unless the interns enter into their work whole heartedly they cannot expect to make desirable staff members in the future.

The problem of securing technicians, according to Mr. Diekman, is one of serious consequence. In his experience he has found that it is not safe to depend on recommendations and that it is better for the hospital to go to the expense of personal interviews, even if this means the railroad expenses of several hundred miles, in order to obtain the desirable person. This subject brought up the question of a probation period for technicians and other employees. Many seemed in favor of this plan but there was a difference of opinion as to whether the contract with the employee should be verbal or written.

Conservation of Linen

As regards the problem of conservation of laundry supplies, Mr. Diekman said that one of the menaces to hospital administration was the "hotel attitude" of employees and guests in the hospital, and by this term he meant that many employees and patients try to use the maximum amount of linen and insist upon carrying it with them when they leave the hospital. He advocated that the large hospital do its own laundry and have a water softener, which, he said, will save the hospital 50 per cent on its linen and 75 per cent on its soap. He offered as a solution for the linen problem a more careful checking by those responsible for its wear, and the stamping of each piece with a modern type of marker, giving the date when it is first put in use and its specific place in the hospital.

The problem of hospital finances and what can be done to cut down the per diem cost was also discussed by Mr. Diekman, who believes that the high per diem cost is largely a result of too much artificiality. The enlargement of services in the various branches in the hospital and the promotion of its educational function, he said, has brought with it red tape that entails a great deal of unnecessary expense. He pointed out specifically that the modern requirements in regard to case records had brought a great deal of expense to many hospitals. Where one person used to be able to handle the records, he said, it now takes three people, and after these records are filed away they are seldom, if ever, consulted.

This problem was also discussed by E. S. Gilmore, superintendent, Wesley Memorial Hospital, Chicago, who spoke in defense of keeping records and said that although it seemed a great expense to the hospital at the present time to keep records according to the requirements of the American College of Surgeons and that although for legal and other purposes the records were seldom referred to after being filed away, they constituted an invaluable aid to the furtherance of medical research and teaching in the hospital.

With respect to the high per capita costs, Mr. Gilmore said that he thought that hospitals should not be ashamed of the mounting costs because they were in proportion to the rise of living costs. Referring to the upkeep of the nurse training school, which undoubtedly adds to the financial burden of many hospitals, he said that there was no doubt that it did cost the hospital more to operate a training school than to employ graduate nurses but that in the end it was the best policy.

In discussing methods of financing church hospitals, the annuity bond plan was recommended as valuable.

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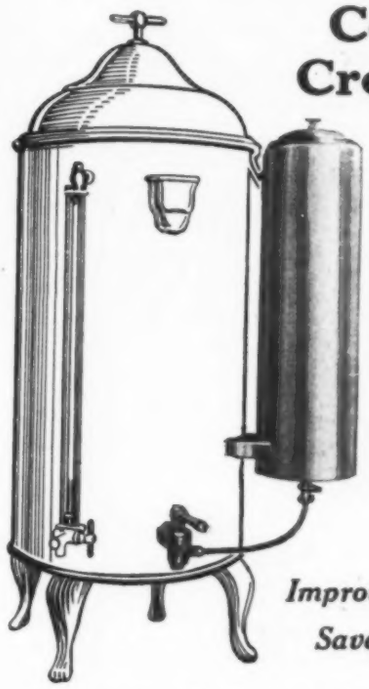

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"The Educational Mission of the Hospital" was the subject of a paper read by Blanch M. Fuller, R.N., superintendent, Nebraska Methodist Episcopal Hospital, Omaha, Neb., who pointed out that the Christian church has the duty and responsibility of being a healer, preacher and teacher and that these best find expression in the objectives of the modern hospital.

During the meeting a quartet composed of church workers from Philadelphia sang several selections. The meeting closed with a pageant staged by the nurses in training at the Chicago Training School, Chicago, under the direction of Mrs. Grace Sloane Overton, in charge of dramatics.

READING COURSE BEING STUDIED AT INTER-HOSPITAL CONFERENCES

Much interest has been expressed in THE MODERN HOSPITAL Reading Course on Hospital Administration that was started in the January issue of the magazine. Hospital executives in Chicago, Cleveland, Cincinnati, Denver, San Francisco, Philadelphia and other large cities have plans now on foot for the furtherance of this course by a monthly meeting of department heads at which time the lesson appearing in the current issue of the magazine will be studied and quizzes held.

To aid in this work, it has been planned to print, from time to time, round table questions that will be a basis for study. In this way the hospital superintendent who is conducting the class will have material upon which to base an intelligent discussion, and in this way a more thorough knowledge of hospital administration will be gained both by the heads of the various departments as well as by the assistant superintendents.

Many unsolicited letters of approval have been received regarding the Reading Course, and plans are now under way by the committee in charge of the course to broaden its value until every phase of hospital administration has been covered. The first three lessons, which form the groundwork for the administrator, have been of a general nature and these will be followed by more specific data regarding actual operation in the hospital and will take up systematically the various administrative functions. The first three lessons have been found to be of great value in preparing for the study of the remaining twenty-one lessons and essential for a proper and thorough understanding of the work that is performed daily in every hospital.

ILLINOIS ASSOCIATION TO MEET IN CHICAGO, MAY 5-6

At a meeting of the advisory committee of the Hospital Association of the state of Illinois held at the headquarters of the American College of Surgeons, Chicago, February 14, it was decided that the annual meeting would be held at the Hotel Sherman, Chicago, May 5 and 6.

A most interesting tentative program was outlined and announced. Chief among the features will be an actual demonstration to be held at one of the large Chicago hospitals at which time the entire routine of admission, residence and discharge of a patient will be held. It is planned that the delegates will assemble in the admission room where some member of the association will act as a patient. He will go through the entire routine of answering questions, being assigned to a room, and finally discharged. After the demonstration the delegates will gather in the conference room where the case record will be discussed, the method and procedures used by the admitting officer, the nursing staff, the interns, the social service workers, the dietitian, the occupational therapist and the accountant will be open for discussion.

Another important session will be that at which operating costs and patient charges will be discussed. An evening session will be held on the first day at which time the nurses, dietitians, social service workers and others in hospital administration work will be invited and will hear several interesting papers devoted to nursing and general department head problems.

Legislation in the state of Illinois will also come in for a full session, and it is planned to take up and discuss every phase of hospital legislation to the end that more active participation may be made in state legislatior during the coming year.

Physical therapy, the hospital pharmacy, clinical laboratories and many other subjects will be discussed.

ARCHITECTS CHOSEN FOR DUKE ENDOWMENT PROGRAM

The firm of Samuel Hannaford & Sons, Cincinnati, has been chosen as the architects for the hospital program of the Duke Endowment, which is undertaking to promote hospitalization in the southern states. The architects will prepare three model plans calling for a twenty-bed, a thirty-bed and a forty-bed hospital, with provisions for expansion. The arrangement of the rooms will be such that by reversing the plan the building can be constructed on any site facing any desired direction. Dr. W. S. Rankin, director, Duke Endowment, will cooperate in the production of the drawings.

THREE NEWARK HOSPITALS PLAN CENTRAL GROUPING

Representatives of the Presbyterian, St. Barnabas' and Babies' Hospital, Newark, N. J., together with the Welfare Federation of Newark, are seeking a site for the central grouping of the three hospitals as a plan for economy in the building and maintenance costs of the institutions. It is planned to raise funds for new buildings for the three hospitals.

NATIONAL CONFERENCE OF SOCIAL WORK TO MEET MAY 11-18

The fifty-fourth annual meeting of the National Conference of Social Work will be held in Des Moines, Ia., May 11-18, 1927. This year the meetings will be organized in twelve divisions: Children, delinquents and correction, health, the family, industrial and economic problems, neighborhood and community life, public officials and administration, the immigrant, professional standards and education, and educational publicity.

Nearly thirty allied groups are planning to hold their annual meetings simultaneously.

CHEMISTRY LABORATORY GIVEN TO UNIVERSITY OF CHICAGO

The University of Chicago announces a gift of $415,000 from George H. Jones, director of the Inland Steel Company, for the construction and endowment of a chemical research laboratory, which will be the first unit of the new laboratories to be devoted to research in chemistry and its relation to medicine and to industry.

12 DINING ROOMS *Served by 2 Colt Autosans!*

WITH two men the Creedmoor Division of the Brooklyn State Hospital is enabled to wash every piece of tableware from its twelve dining rooms and have them all put away within one half hour after the meal is finished!

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COLT AUTOSAN
DISH AND SILVER CLEANING MACHINE

Two Model "C2" Colt Autosans installed in Brooklyn State Hospital by Duparquet, Huot & Moneuse Co., N. Y.

Your Everyday Problems

A department devoted to the informal discussion of problems arising in the everyday life of the hospital superintendent.

[No attempt has been made to offer final conclusions relative to the questions considered in this department. THE MODERN HOSPITAL will gladly welcome further comment by its readers on any of these problems, or the presentation of other queries for discussion in later issues.—Editor.]

Should Interns Complete Their Training Without Instruction in the Practice of Anesthesia?

This question was asked THE MODERN HOSPITAL by an administrator who is apparently having difficulty in insisting that the members of his intern staff receive careful training in the administration of anesthetics.

One of the ways in which recent graduates in medicine are able to earn a part of their early income is by the administration of anesthetics. Indeed, there has been developed in recent years a definite specialty along this line. The increase in the use of local anesthesia in the surgical clinics of this country, and the not infrequent employment of novocain or some other drug to produce spinal anesthesia, have served only to broaden the scope of this specialty. It appears that more gas and oxygen anesthesia is being used than formerly, and that surgeons are loath to submit patients, with any contra-indication to an anesthetic, to the inhalation of ether, when a prolonged and satisfactory anesthesia can be produced with gas.

The young physician, therefore, as he emerges from his hospital service, must have a well grounded understanding not only of the art and science of administering ether but also of the mechanism and functioning of the standard types of gas machines.

It is the hospital's duty, it would appear, to impart to its interns this instruction. Moreover, many state boards of medical education and licensure require that the physicians who are admitted to their examinations present a certificate covering, among other things, the question of anesthetic instruction in their hospital. It would seem that no hospital which does not possess such a department is performing its full educational duty to its interns. The hospital is also in a better position to serve its patients rightly, if its intern staff is trained in the administration of anesthetics of all kinds.

It is not within the scope of this question to discuss the organization of such a department, but it can be said that usually a physician makes the best departmental head, and that one or more paid nurse anesthetists may be on this staff.

The hospital is justified, in the opinion of most administrators, in insisting, while the members of its surgical staff may prefer to have their anesthetics given by the paid anesthetist, that the instruction of interns in anesthesia be not slighted. Surgeons should be willing to recognize their responsibility in this matter, and to insist that their interns be given proper instruction along this line.

What Practical Steps May Be Taken to Bring About Economy in the Use of Coal As Fuel in Hospitals?

It is not enough for the hospital simply to purchase "coal" for use beneath its boilers, for there are as many different varieties of coal as there are of any other article which the hospital uses. Coal which is too highly volatile is costly to the hospital. Coal that easily produces clinkers and fuses on the grate bars, rather than being completely consumed, not only creates much more work from the standpoint of power plant personnel, but does much damage to the boiler grates.

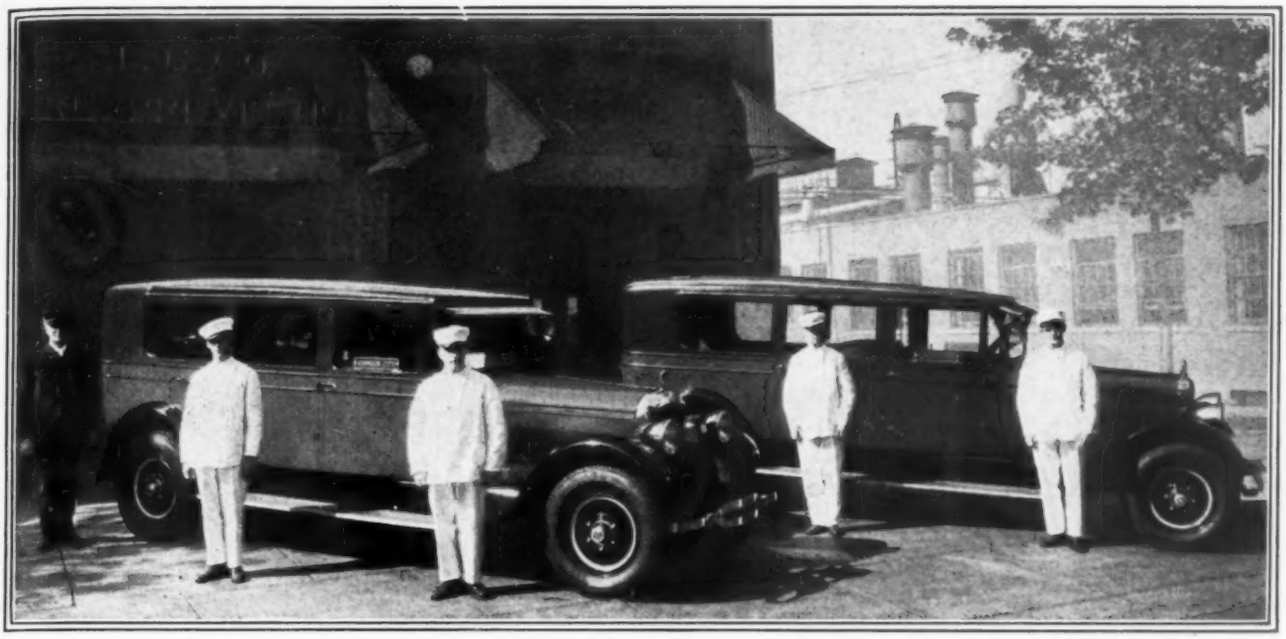
The question of the amount of water that each ton of coal will vaporize, is, after all, the *sine qua non* in coal efficiency. It would pay most hospitals, whether they buy fuel in large or small amounts, and particularly if they employ bituminous coal, to secure an accurate evaporation test under proper supervision, and also to procure, if possible, the judgment of a governmental or other scientific laboratory, as to the combustible properties of their coal. Many superintendents have found that attention to the specification and testing of coal that they purchase will save many dollars in fuel expense.

Given a good steam coal, the next item to be considered is the efficiency of the personnel in the power house. Firemen who are anxious to produce every pound of steam possible from a given amount of coal are of the greatest help to the superintendent in keeping down the fuel expense. The banking of one or more fires at night, when less steam and heat are required, is a useful expedient. Accurate weighing of coal burned each day under each boiler, if facilities are available, and a comparison of the efficiency of the boiler and its firemen, are also found to be useful steps in bringing about this end.

The presence or absence of boiler tube scale is a matter that should constantly be given attention. Boiler tube scale is the source of a preventable loss of much money in the hospital field annually. Not only does the presence of this scale on the inside of the tube hinder the heat from reaching the water to be evaporated, but it also does much damage to the tube itself. As a result of scale being brought to a white heat a tendency develops to fuse and crystallize the tube itself.

The prevention of tube scale centers about the chemistry of the water used. The ordinary water softener seems to be the best solution to this problem.

Rigid attention to steam leaks throughout the tunnels and buildings of the hospital is another way of cutting down coal bills. Proper insulation of steam lines offers an added opportunity to the superintendent to lessen expenditures for coal. The turning out of electric lights, and the cutting off of steam from radiators when steam is not needed; the heating of water in the return lines before it is again used, are practical measures that may aid the superintendent in promoting efficiency in his power house.



"The best car built for ambulance service"

Is the tribute paid Studebaker Ambulances by Endicott-Johnson Chief

AS IN innumerable American cities where thriving communities are developed around a principal industry, Johnson City, N. Y. with a population of 40,000 has been built around the great Endicott Johnson factories.

Welfare work in such places is more than an implied obligation—to prosper, living and safety conditions must meet present day standards. For this reason the company officials extend to their employees and to other residents the benefits of a well organized personal safety department. This includes an ambulance service of high efficiency.

Two Studebaker Ambulances owned and operated by Endicott Johnson, under the supervision of J. R. Eldridge, the company's fire prevention chief, respond to all sick and emergency calls in Johnson City.

"I want to tell you how pleased we are with the two Studebakers which were put into service last fall," writes Chief Eldridge. "We have experienced no difficulty whatever and find them fully up to our expectations. They have lots of pep and are very easy riding, a feature frequently commented on by the patients we carry. We have every reason to believe we have selected the best car on the market for this work."

PRICES—	Studebaker Ambulances
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Combination Ambulance-Sedan	$2,875
The Bellevue Ambulance	$2,985

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Is It Ethical to Assess Staff Physicians a Certain Sum, In Conducting A Drive to Raise Funds for Building Purposes?

Physicians are placed on hospital staffs because it is felt that they possess a scientific skill which will be of benefit to the hospital's patients. In return for the work done, the bulk of which usually represents the free treatment of ward patients, the staff physician is allowed to use the hospital's private rooms for the treatment of patients from his own practice. Whether or not in this arrangement the hospital or the physician benefits most need not be considered as having particular bearing on the above question. Such an arrangement is the custom generally.

Nor does it seem desirable to assign physicians as members of a hospital staff because they possess a large opulent clientele, which will patronize the hospital's private rooms.

To assess a staff physician a given amount of money, in a hospital drive does not appear either ethical or in any way justified. Most staff physicians possess sufficient interest in the welfare of their hospital to contribute such a sum as their income will permit, during hospital drives. The assessment of a physician rather suggests that he is paying this price for the privilege of being a member of the hospital staff.

Would it not be better frankly to place the necessity of securing more funds for the hospital before a meeting of the institution's staff, and allow these physicians to raise as large a sum of money as possible, either by solicitation of their friends or by any other means that suggests itself?

What Is the Best Method, in Compliance with the Harrison Narcotic Law, of Keeping the Hospital's Records of Narcotics Used?

In non-teaching institutions Government requirements are very strict in regard to the keeping of records of narcotics used.

It is presupposed that each member of the visiting staff will have been licensed to dispense narcotics in his practice, and it is expected when morphin is prescribed for a hospital patient that these physicians will sign the order on the hospital chart before it becomes valid. It is customary in some instances for the resident physician to be authorized to inscribe the chief's name on the chart, when morphin is needed and the chief is not present. It is expected that the total amount of morphin withdrawn from the drug store of the hospital can be accounted for by the computation of the individual orders on the patients' charts.

In teaching institutions the requirements are not so rigid. In these institutions in no less degree than in the non-teaching institutions, must a permit be granted for the hospital to purchase narcotics, but the signature, referred to above, on the patient's chart is not routinely required.

Most hospital superintendents have devised a practical scheme for the detection of the illegal and unnecessary use, not only of narcotics but of alcohol in the hospital's work. A duplicate prescription book is sometimes employed, or a book similar to a large check book, the duplicate of the prescription being kept on the stub.

To prohibit standing orders of narcotics is to facilitate the keeping of records in regard to the therapeutic use of these drugs. A frequent inspection of narcotic books and an occasional computation of the amount of narcotics ordered in the wards, as compared with the total amount withdrawn from the drug store, present definite incentives for physicians and nurses to adhere strictly to the hospital rules governing this matter.

Is There a Precedent for Having All Hospital Employees, Except Doctors and Nurses, Live Without the Institution?

It appears that it is consonant with modern thought in hospital administration, to board as few employees within the hospital as possible. Indeed, some institutions of size have no accommodations for the housing of any group except doctors and nurses, and in one institution the interns take their meals at the hospital but live elsewhere in the city. It is good policy if the hospital is near a car line and not too far from a section of the city where board can be secured, to pay the hospital employees, that is, orderlies, attendants, firemen, porters and floormen, a sufficient wage to enable them to live without the hospital.

One superintendent, in endeavoring to compute the amount of money that he would be required to add to the salary of each employee were this plan to be adopted, estimated that it cost him fifty cents a day for food for each person who took his meals in the hospital. From this figure, he decided that he must raise each attendant's wage at least twenty-five dollars a month, in order not actually to have reduced his salary by requiring him to live outside the hospital.

Except in institutions where budgetary arrangements make it impossible to deduct funds from the food item and add them to the item covering the salary of personnel, it should make no difference to the hospital whether it spent more for salaries and less for food, or the reverse.

Some hospitals have established well arranged lunch rooms where employees may eat their luncheon, and where they may get hot coffee or tea at lunch time. Other hospitals charge a minimum sum for a portion, or all, of the employees' luncheon. The location of the hospital will determine the degree of development of this plan.

To require a large proportion of the employees of the hospital to leave the institution at the end of their day's work, will be to relieve the hospital of many problems that arise when the men and women of the hospital personnel are housed within its grounds.

THE MODERN HOSPITAL'S advice with regard to this question would be that the superintendent should carefully consider the possibility of converting the present dining room into a lunch room for employees, making a sufficient addition to their salaries to enable them to live without the hospital.

Is It Unethical For the Superintendent to Accept Presents from Those from Whom the Hospital Purchases Supplies?

This is a problem that has presented itself to many ethical and upright superintendents. Not infrequently is it the case that the superintendent numbers among his personal friends those who, from time to time, sell the hospital goods. Nor is it an unusual thing for these persons to wish to remember the superintendent at Christmas time, for example.

The answer to the above question must center about the motive which the superintendent believes prompts the donor of such presents. To one man a gift might mean the expression of a kindly and generous impulse toward

A DETAIL

OF UTMOST MOMENT

—CATGUT—

Every operation, says Sir Berkeley Moynihan, even those procedures which are now quite commonplace, should be executed no in the spirit of an artisan who has a job to get through, but in the spirit of an artist who has something to interpret or create. How vitally essential, then, it is that the makers of the surgeon's tools should realize their responsibility. As the most important person present at an operation is the patient, so the most important detail of an operation is the catgut.

Johnson & Johnson

NEW BRUNSWICK
N. J. U. S. A.

the superintendent, as his personal friend. To another, such a gift might have an invisible attachment to it, which was intended to bring more money into his own, or his firm's coffers.

As a general rule it is wise for the administrator not to accept gifts of any kind from those who have commercial dealings with the hospital. This rule has some exceptions, but the experienced administrator must be the judge of the exception, when it arises. To ask and give no favors in business matters is a good general rule.

Is It Possible to Establish and Adhere to a Standard Allowance Per Day of Clean Linen for Each Ward?

Unless there is a standard of linen for the various ward services in the hospital, the superintendent has no basis upon which either to regulate the misuse of linen or to judge as to whether linen is being lost through theft.

The establishment of a central linen room, and the adoption of a direct exchange system, require that soiled linen from each ward be counted daily. But to inaugurate this system requires, first of all, that a standard allowance per bed be decided upon. This standardization must concern itself not only with the number of articles allowed for any specific ward, but should be made to apply to special types of the same article, which are to be used for varied purposes.

Reference is here made to the need for special towels, for the use of patients, doctors, nurses, and for kitchen and dining room use. In a large public hospital the following standard has been agreed upon:

For each continent bed patient, daily: one towel, one sheet, one pillowcase, one bed shirt; twice a week, one spread and one bath towel.

For incontinent patients, where the bed must be changed at least six times a day, the following is the allowance: six sheets, four shirts, one spread, and six pillowcases.

For ambulatory patients: three sheets, two pillowcases, one spread, and one towel per week, and one bath towel twice a week, is allowed.

These standards are given as examples of an allowance for a specific type of patient. If the hospital be a children's or a maternity hospital, a different linen standard must be adopted.

It is, therefore, not only possible, but strongly indicated that a definite standard should be set for the issuance of hospital linen, and if this standard is properly worked out and adhered to it should present no serious practical difficulties.

For amplification of this subject, the reader is referred to THE MODERN HOSPITAL, Vol. 26, p. 513, June, 1926.

What Practical Suggestions Can Be Offered to Prevent Deterioration in Rubber Goods?

The expense incurred in the purchase of rubber goods is not the least of the outlays of money demanded by the hospital. Perhaps the most expensive item coming under this heading is the purchase of rubber gloves, hot water bags, ice caps and rubber sheeting.

The first and best rule that can be laid down relative to economy in the purchase and handling of rubber goods, is that here, as in the case of many other goods, the highest quality is in the long run the least expensive. Unless some named article of high grade is selected, the superintendent is often tempted to purchase rubber goods on price and a reputed quality. All-rubber hot water bags and ice caps are favored by some, instead of the cloth inserted article. The same may be said of fountain syringes and invalid cushions.

In regard to the general care of rubber goods, a hot, dry atmosphere tends to deteriorate them. It is believed by some that powdered sulphur sprinkled over rubber helps to preserve it. The purchase of rubber goods in amounts that will not require long storage in the hospital is also a wise plan.

In regard to rubber sheeting, which is rather expensive, it should be remembered that ammonia hardens and cracks it, and that oil is also detrimental to it. Rubber sheeting should be washed with soap and water, rinsed well, and dried thoroughly before being put away. When sheeting is stored, it should be rolled, and never folded.

Rubber rings, hot water bags and ice caps may be cleansed in the same manner as indicated for rubber sheeting. It is wise to leave a small amount of air in invalid cushions, to prevent the sides from adhering to each other, the same may be said of hot water bags and ice caps.

Soft catheters should be first rinsed in cold water and then washed with soap and water. Finally, after being rinsed with hot water, they should be boiled for three minutes before being put away.

Hard rubber catheters, as well as those made of silk and rubber, or linen and rubber, are usually sterilized by placing them in an antiseptic solution, and then rinsing them several times before they are used.

Rectal tubes should be rinsed in cold water, washed in soap and water, and, after being rinsed in hot water, sterilized by boiling for three minutes.

Rubber gloves should be rinsed in cold water, to remove all traces of blood and organic matter. They are then washed in warm water and soap, after which, they are placed in a pan of boiling water to which has been added some sodium chlorid. Finally, after being boiled for three minutes, cold water is again run over them, and the gloves are then iced for fifteen minutes, before hanging them up to dry, with cuffs down. When dry, they are tested by filling with air. If holes are discovered, the gloves should be mended, powder placed in the inside of the glove, and the cuff turned down. They should be matched for pairs before being put away.

Some hospitals use dry sterilization, in which the glove is subjected to autoclave heat of fifteen pounds' pressure.

Is it Objectionable to Place Maternity Cases, After Delivery, in the Women's Surgical Ward?

It is a good hospital procedure to separate the maternity department, in every respect, from the other wards in the hospital. This implies that it is not wise to allow the common use of an operating room for general surgery and for the delivery of obstetrical patients. The presence of a separate delivery room is perhaps of greater importance than the absolute separation of maternity patients from others suffering with surgical conditions.

On the other hand, it must be borne in mind that before and during delivery, and the puerperium, patients are particularly prone to infection, especially by pyogenic organisms, and the surgical ward is apt to be infected with germs of this type. In other words, the surgical ward is a source of potential infection to maternity cases. From this standpoint it would not appear wise to place the patient immediately after delivery in a ward with surgical patients.

There is another angle to this question. It is neither a convenient nor an advisable practice to bring the child to the surgical ward at feeding time.

Surveys

A HOSPITAL campaign has the best chance of success when it is based on a soundly-conceived plan of hospitalization and finance. To help busy trustees obtain the facts which they need in working out such a plan, we are prepared to make a preliminary survey of their hospital and community. This examination is critical and interpretive rather than exhaustive. In several recent instances our surveys have materially aided trustees to fit their building projects more accurately to the needs and resources of their communities.

These preliminary surveys are made without charge and of course without obligation to the hospital.

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OUT-PATIENT SERVICE

Conducted by MICHAEL M. DAVIS, Ph.D., Executive Secretary, Committee on Dispensary Development, United Hospital Fund of New York, 15 W. 43rd Street, New York

and by ALEC N. THOMSON, M.D., Medical Secretary, Committee on Dispensary Development, United Hospital Fund of New York 15 W. 43rd Street, New York

SOME PRINCIPLES UNDERLYING EFFECTIVE RECORD KEEPING

Summary of a Report of a Committee of the Associated Out-Patient Clinics[1] of New York

IN THE good old days of the family doctor and his faithful Dobbin, when communities were small and the doctor knew everybody from the newest baby to John Jenkins, the baby's octogenarian great-grandfather, record cards and all the other elements of a filing system were unknown. But today when the daily tally of visitors to many an out-patient department is larger than the annual sum of all the old doctor's patients, even the smallest clinic uses some written method of recording necessary information about patients and their visits. Often the effectiveness of a clinic's work may be measured, in many respects, by the type of recording done and the degree of importance that administrators and physicians attach to the keeping of full and accurate histories of their patients.

With this in mind the medical and the administrative sections of the Associated Out-Patient Clinics of New York appointed a joint committee to study the different phases of record keeping and to present a report that would outline underlying principles of efficient work.

Why Good Records Are Essential

This committee, in its preliminary discussion considered that good records were essential because: (1) records from memory are obviously unreliable; (2) a succession of doctors is often inevitable and the physician who assumes responsibility for a case should have before him in writing an adequate clinical life history of the patient (records should be so written by a physician that the next physician may use them intelligently); (3) a good record furnishes the basis for teaching; (4) a good record furnishes material for scientific study and research; (5) a good record saves time and duplication of energy and thus expense; (6) a record is necessary from a legal standpoint where controversies concerning the patient's condition may have to be decided in a court of law; (7) good records are necessary for future as well as immediate purposes.

Then, since outlines clarify thinking, the committee listed various factors that would facilitate good record keeping: (1) A satisfactory set of record forms; (2) a satisfactory filing system, preferably of the central unit variety, with cross-index systems for diseases and complications; (3) adequate clerical assistance; (4) limitation of the number of patients in order to permit sufficient time for thorough examination, treatment, and recording; (5) an adequate follow-up system; (6) an enthusiastic clinical staff; (7) a sympathetic administration.

In discussing these factors the committee came to the conclusion that only in a well organized clinic could really effective record keeping be found. For example, where the same physician takes care of patients in both the in-patient and the out-patient departments of a hospital, he will find it necessary to use the same records and will consequently be more interested in having out-patient department records carefully made and centrally recorded. In the interest of good record keeping, therefore, the committee recommended that the hospital and its out-patient department be served by a unified medical staff.

Likewise, since physicians, like other mortals, are stimulated by supervision and recognition, it would be helpful to have the physicians who occupy the higher rank on the hospital staff visit the out-patient department at frequent intervals in the capacity of consultants and instructors. In these capacities, of course, they would inspect the records.

Another way to stimulate interest in the records would be to take into consideration the quality of the record kept by the physician in estimating his fitness for promotion. For, under ideal conditions in the administration, the clinical record reflects, in a large measure, the clinical intelligence of the physician.

Periodic staff conferences, surely a way to increase cooperation between the staff members, will also provide inspiration to the younger men and indirectly stimulate them to better record keeping.

If clinical records are used, not only in the routine way but in making studies, physicians will feel even greater interest in keeping their records in good shape. Thus exhibitions of graphic statistical studies of various clinical activities intended primarily for the education of the clinical assistants and to give the clinic chief a means of presenting accurate information about the work of his clinic, will bring about as a by-product more intelligent and more accurate record keeping.

When supervision of clinic work by the chief of clinic

1. E. M. Bluestone, M.D., chairman, Mark L. Fleming, M.D., Joseph D. Flick, Peter Irving, M.D., Frederick MacCurdy, M.D., Luther B. MacKenzie, M.D., James U. Norris, Louise C. Bentley, secretary.

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is extended to his assuming responsibility for the recording of clinical facts, and improperly or incompletely made out records are presented to him by the record room clerk for review with the physicians under him, staff members naturally take more care in writing up their cases.

By establishing these conditions in a clinic the principles underlying efficient record keeping are taken care of. But there are other important considerations. Who shall be responsible for the written records? How long should records be kept? Shall the record of laboratory reports be kept with the permanent record? Where does the social service record belong? Shall the record be taken to the clinic for every visit of the patient? What should be the policy of the out-patient department toward the removal of records? Shall the cards belonging to active and inactive cases be separated? How shall the patient be discharged on a record and when? Shall definite terminology be used in writing out the record?

Doubtless there are numerous other points that might be taken up but these, at any rate, are important.

The taking of a medical history by the physician is of prime importance in most medical cases. Close confidence between the patient and the physician is thus established, hidden clues are brought to light, the patient's personality is better understood, and the physician's interest receives the necessary stimulus. Since the responsibility for all clinic notes belongs to the physician he should sign his name in full to all entries made on the records of his patients. The signature of a physician on a record indicates that he is familiar with and approves of its contents.

How Long Should Records Be Kept?

In an ideal record system clinical histories should be kept in perpetuity. In a decentralized system where there frequently is duplication in medical information, abstracting may be of greater advantage. But abstracting is costly and often difficult. For both current and historical purposes the unit history system presents the best type as a permanent record.

Where laboratory records are under consideration, three methods are wise: (1) Interpretations of x-ray films should be kept in the laboratory indefinitely as a check on the clinical record and for easy accessibility; (2) slides, films, and plates, both negative and positive, should be kept as temporary records for one year, when all but those required for teaching material and for research purposes and those on which there may be a difference of opinion in interpretation, or possible legal question, may be discarded; (3) cardiographic films and tracings should be placed on the record if the expense can be met.

If a central filing system is maintained, laboratory and clinical reports should be sent to the record room direct, to be incorporated into the record, instead of to the clinic room. Where there is no central filing system, laboratory records should be sent to the person in charge of records in the individual clinics for disposition in the same way. It is helpful when laboratory records of all kinds are printed in identifying colors that indicate their character at a glance.

Under ideal conditions the social service record should be incorporated with the medical record. Because the social record is sometimes rather bulky, this is not always practical. The social service department may have its own file for convenience but social summaries should appear in their chronological order on the medical history in order that the physician may have before him the social data pertinent to the patient's medical treatment.

To insure accurate recording and adequate treatment the record should always be produced in clinic in order to be sure that the physician will have it on hand when he needs it and that it will be kept complete.

To guard against loss the record should always remain in the hospital. It should never be removed except on an order of the court and then only under proper safeguard.

The removal of a record from the record room for use in the institution should be controlled by a system of receipts. In the decentralized record system it is important to have this safeguard even when a record goes from one clinic to another.

When a physician wishes to do research work the administration should assist him in every possible way by having official copies made of histories required, and by allowing the staff to borrow x-ray films, pathological slides and other originals. The degree of sympathy that a hospital has toward scientific records is shown in part by the facilities for recording placed at the disposal of the physicians.

The cards belonging to active and inactive cases should be separated. Records of inactive cases are, for the purpose of classification: (1) Records of deceased patients; (2) records on which the physician has indicated that the patient need not return; (3) records on which follow-up note says patient need not return; (4) records of patients not heard from in three months.

When a record is removed from the active to the inactive file, a note to that effect should be entered on the alphabetical index card. "Approved" or "complete" should be written by the chief of clinic, with the date and his signature, on histories that he considers ready for the inactive file.

When there is a central or unit filing system and the out-patient is carried indefinitely over a period of years, not merely as a single case but as an individual who returns at intervals for treatment, no formal discharge is required. The patient's record is never really complete, until post-mortem findings have been recorded. But results on cases should be noted. If the patient moves to another city, or if he is discharged to a private physician or another clinical agency, his record will not be complete nor will it be of full scientific value until the subsequent condition of the patient has been obtained and added to the record.

What Terminology Should Be Used?

For the purpose of gathering clinical statistics a definite terminology is necessary. In general, however, an effort should be made to get away from the use of stereotyped terms in writing final notes of a patient's condition. There should be ample opportunity for modifications of these terms. A patient (or clinical problem) conforms to no definite standard and cannot therefore be pigeonholed with mathematical precision.

The following nomenclature, in common use, illustrates the lack of a clearly defined terminology:

arrested	improved	successful
convalescent	no operation	unchanged
cured	partially satisfactory	undetermined
died	partially successful	unfinished
eloped	quiescent	unimproved
escaped	refused treatment	unsatisfactory
failure	relieved	well
	satisfactory	

As far as the clinician is concerned it is a matter of expressing himself with sufficient clearness in completing a record.

The physician who completes the record of his patient should always bear in mind that the use of the terms listed above is justifiable only for statistical reasons.

Every Hospital Director *knows . . .*

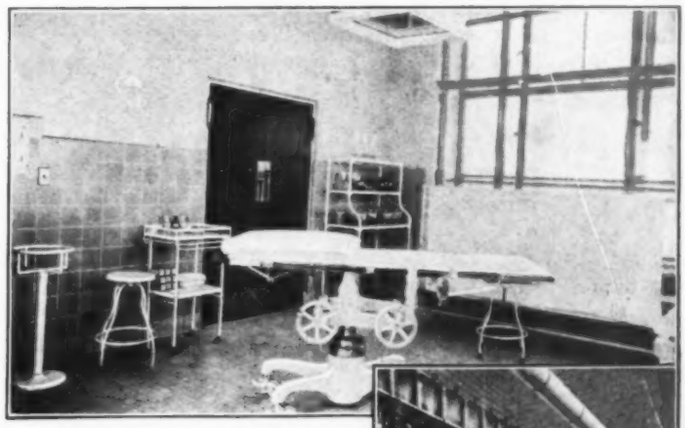
HE appreciates the vital importance of a dependable lighting system. He knows that five minutes of darkness in the operating room may cost a life.

Such emergencies are a constant menace, whether the hospital uses city current or has its own generating plant.

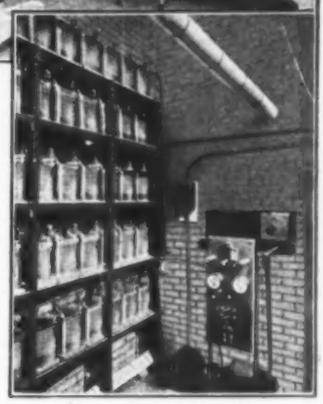
The only real protection against lighting failure is an emergency lighting system *with a dependable source of current supply*—one that will *always* be ready to take over the job of lighting.

Here lies the advantage of the Exide Emergency Lighting Battery. This battery can always be depended on to furnish plenty of current. It is connected at all times to the main power line, from which it takes a continuous "trickle" of current. This keeps it constantly at full charge, and at any interruption in the main power line it is ready to supply current for the emergency lights, which start up automatically—without even the trouble of throwing a switch.

There are Exide Emergency Lighting Batteries for every size of emergency lighting system, whether you want to light a single room or a whole hospital. Thus, by adopting Exides as a source of current supply, you can gauge your installation to fit your actual needs and your available budget.



There's no danger of light failure in this operating room in the City Memorial Hospital, Winston-Salem, N.C. It is protected by an Exide-equipped emergency lighting system.



The City Memorial Hospital has a system that lights the operating room in emergencies, and this is the battery that furnishes the power.

Engineering advice offered

Unless your hospital is already equipped with an emergency lighting system you are certainly interested in this vital question.

Let us send one of our engineers to discuss it with you and give you information that will help you plan an emergency lighting installation. This will put you under no obligation. Use the coupon below.

Exide
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
Exide Batteries of Canada, Limited, Toronto

The Electric Storage Battery Co., Philadelphia

Please send a representative from your nearest branch to consult with me on the installation of an emergency lighting system. I understand this will put me under no obligation.

Name.....

Hospital.....

City.....State.....

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NURSING AND THE HOSPITAL

Conducted by M. HELENA MC MILLAN R. N.,
Director, School of Nursing, Presbyterian Hospital, Chicago

SOME TRAINING SCHOOL PROBLEMS*

By Sister M. Laverty, R.N., Superintendent of Nurses, Edmonton General Hospital,
Edmonton, Alta.

HAVING been asked to present at this convention a paper on "Training School Problems," I beg to submit for your consideration, not a complete presentation of the subject, but a short discussion of a few of these problems, classified under the following headings:

1. Theoretical Training.
2. Practical Training.
3. Home Conditions.

Under the first heading might be placed, (a) recruiting of suitable candidates for our schools; (b) uniformity of teaching; (c) reading material for nurses' libraries; (d) loyalty to the physician in charge of the patient.

(a) One of the outstanding problems of our schools is to obtain candidates having sufficient preliminary education. In this prairie province of the West, a scattered and floating population makes advanced education a difficult problem, and yet we need as students mature young women who have a background of preparation, not alone those who are merely willing.

The more education these young women possess, the better are they fitted for that noble profession to which they aspire, for while education may not be indispensable for skill of the hands and for adaptability in bedside nursing it should, nevertheless, give to them that broader view of life, which is an essential in dealing with the frailties of human nature.

Education of the laity, parents and teachers especially, as to the opportunity for professional preparation offered in our training schools, should help to secure students. One way to accomplish this is by more frequent circulation of hospital and training school literature in schools, both public and private, in public libraries and to individuals who might be interested.

The School Nurse's Influence

The school nurse, whose work brings her in direct communication with the teachers of rural districts, could emphasize the importance of encouraging girls to enter high school in order to be ready for professional training. This nurse, also, by example, can be the best possible recruiting agent for training schools. If her personality is appealing and her work acceptable, without making especial effort she is able to direct the thoughts of the young women of the community toward nursing and encourage the parents to accept their daughters' choice.

Could not the superintendents of training schools arrange with the principals of high schools for more time on the vocational programs, in order to present nursing with its many opportunities and the varied types of work for the graduate nurse?

(b) Uniformity of teaching. The nursing profession, with its intimate contact with the sick and its wonderful opportunity for service to humanity, might well become the ideal life to which we aspire. The hospital training school is recognized as an institution offering a high type of theoretical and practical education and has a decided advantage over the average educational institution, in that theory and practice are coordinated.

The new syllabus recently presented to the province should make the uniform system of training clear. It is entitled: "Regulations of the Training School for Nurses of the Province of Alberta, as laid down by the Senate of the University of Alberta, together with Minimum Curriculum for the Training Schools and Suggested Arrangements for Courses of Lectures, Recommendations for Textbooks, and Class Equipment."

Syllabus Furnishes Curriculum

This syllabus should prove to be of immense assistance, and a number of copies have already been distributed to the different schools throughout the province. I would here suggest that a vote of thanks be given our worthy ex-registrar, Miss E. McPheddran who, with her able co-workers, has furnished us with a curriculum highly appreciated and gratefully received by every training school superintendent of the province.

That our schools are endeavoring to respond to the demands of the medical profession by graduating efficient nurses, qualified adequately to care for the sick in this region, is, I think, beyond dispute. However, there yet remains much to be accomplished, but with the wise and energetic cooperation of our hospital physician, a cooperation which we immensely appreciate, the desired ideal may in time be realized.

(c) Literature needed in a training school. The nurses' library should contain a variety of reading matter consisting of religious books, entertaining fiction, books of humorous stories, poetry and travel. In addition it is most important that there should be placed at the nurses' disposal a carefully selected group of reference books to supplement the work of the classroom.

*Read before the meeting of the Alberta Hospital Association and the Alberta Association of Registered Nurses, held at Calgary, November 23-24, 1926.

Frigidaire gives *positive* refrigeration to Hospitals

THE diversified requirements of hospital refrigeration are admirable met with Frigidaire. Hundreds of hospitals know that Frigidaire provides correct temperatures for *safely* preserving costly drugs, serums, antitoxins, blood for transfusion—besides keeping perishable foods in the best of condition for emergency use.

In kitchens, laboratories, morgues, Frigidaire operates with unvarying dependability and at a remarkably low cost.

Frigidaire operates automatically, maintaining constant low temperatures at which rapid bacterial growth is impossible. It may be installed complete with metal cabinet or a Frigidaire mechanical unit will convert standard ice-boxes at little cost. Send for full information about Frigidaire for hospitals, the low prices and the terms of the General Motors deferred payment plan.

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(d) Loyalty to the physician. The nurse should ever bear in mind that the special reason for her professional service is the whole-hearted cooperation with the physician or surgeon in attendance on the patient. This means not only the faithful carrying out of the physician's orders but also complete sympathy with his methods and measures of treatment. It is extremely important that the nurse be taught the danger of commenting on the physician's methods of treatment, her duty being to practice complete loyalty to the physician whose patient she is nursing. Only recently I was asked by one of our physicians whether or not it would be possible to impress on the superintendent of nursing schools "the importance of giving us nurses who can nurse our patients."

The teaching of ethics in our training schools gives opportunity to emphasize in classroom talks the attitude of the nurse toward the patient and of the nurse toward the doctor. More important still is the example set for the young nurse in her daily life in the hospital. The physician has no greater admirer than the nurse who is quick to follow the example of ethical behavior that he sets.

Turning to the second point, the nurses' practical training, let us consider (a) the supervision of floors. Theory and practice in the education of the nurse must go hand in hand and we must bear constantly in mind the fact that we cannot get the best results in our schools, no matter how excellent the classroom teaching, without constant supervision of the student's different nursing assignments throughout the entire period of her training. We all believe in education for the nurse but is there not a tendency to overestimate theory and to present sometimes an unbalanced curriculum?

The problem of how much responsibility can or should be delegated to the senior nurse is one frequently encountered. This I would consider somewhat an individual matter, varying according to circumstances and depending largely on the number of patients and the ability of the particular senior nurse.

Trained Supervision Needed

It must be remembered always that student nurses have a right to expect supervision in their work from a trained, experienced nurse, and that supervision of the right type implies knowledge and ability to teach. Merely to command, without teaching correct methods of work, is waste of time and energy and it is hardly to be expected that the senior student nurse is prepared wisely to supervise and instruct. Demonstrations should be given in the classroom, but observation must be developed in connection with the daily bedside nursing.

While it does not seem wise to give to the student nurse full responsibility for the conduct of the ward, she should be allowed a wide scope for individual work with guidance from the efficient graduate always at hand.

(b) The successful training of the nurse in pediatrics is another problem of our schools, as the majority of our nurses receive but a limited course in child psychology. The nurse should be taught to use her powers of observation together with her common sense. The demands of the sick child are not those of an adult, and upon the ability of the nurse to recognize and meet these needs depends her success. Her feeling of responsibility should be developed in a special manner.

In order not to have over-tired nurses in attendance in children's departments, I would suggest assignments of only one month at a time and I would like to emphasize the fact that the real training in this branch of nursing is accomplished in actual clinical and bedside work carried on according to the instructions given by the pediatrician and properly supervised by a graduate nurse conversant with the physician's methods.

(c) How much training should the nurse be given in laboratory work? She should at least become familiar with the following articles of equipment: Centrifuge, incubators, hot air sterilizers, autoclave and microscope. She should be capable of doing certain scientific work, such as routine urinalysis, staining of tuberculous bacillus, staining of pus smears and cultures.

With close supervision she should be capable of doing microscopic urinalysis, red and white cell counts, microscopic examination of sputum for tuberculous bacillus, microscopic examination of pus smears and preparation of reagents and solutions. This scope of work I would judge sufficient for any nurse who does not wish a special course in laboratory work.

The Problem of Home Conditions

Taking up the third point, the nurses' home conditions is another problem that confronts us, and much may be done to make our homes more attractive and comfortable for the student. Well organized recreation is necessary in order that the nurse may maintain the proper standard of health.

Although the life in a hospital is too intense and absorbing to admit of much outside social activity, many nurses look back upon their training school days as the time when they enjoyed some of their happiest experiences and formed close and lasting friendships. The recreation room in the nurses' home should be large enough to allow simple amusements, class games, parties and home socials. In schools where the pupil nurse members of the glee club are permitted to be responsible for some of these entertainments, the results are most satisfactory, both mentally and physically. A tennis court should also be provided for regular outdoor exercise, and long walks should be taken frequently.

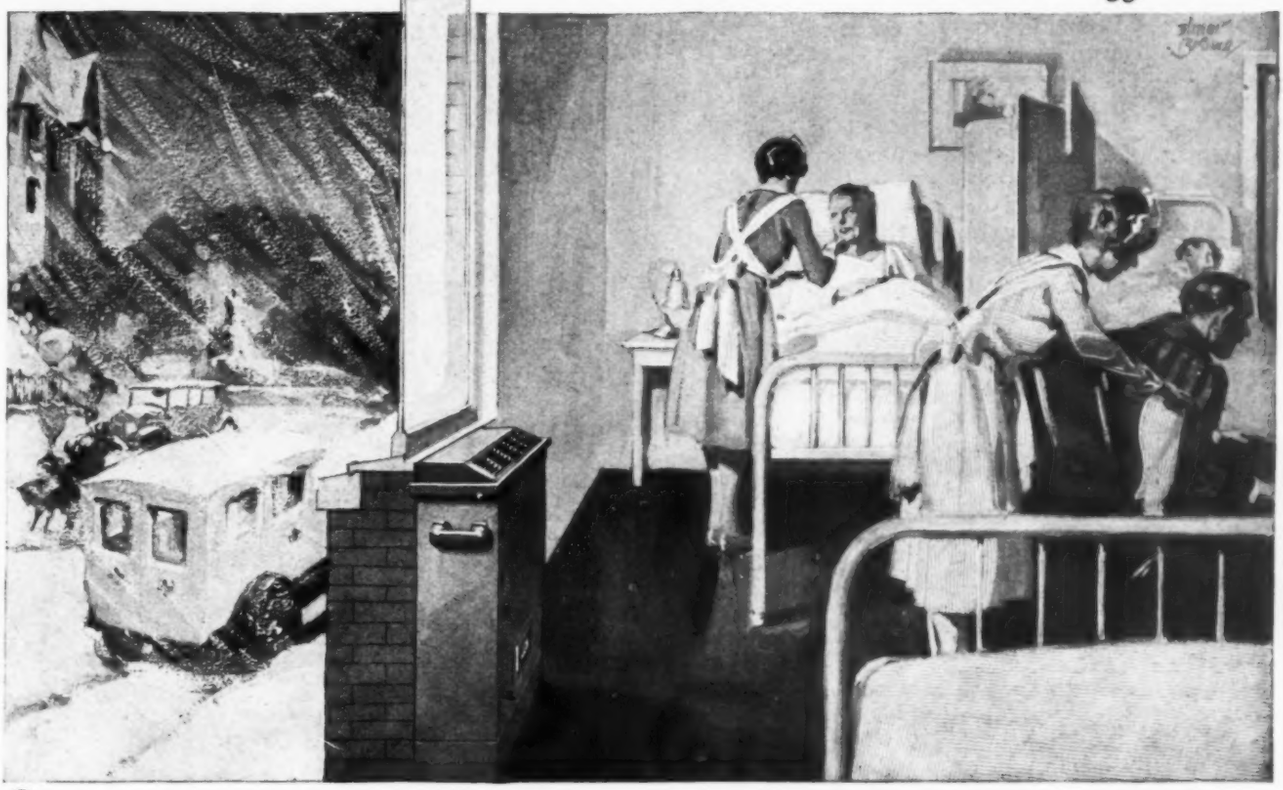
The food and the manner in which it is served are often detrimental to a girl's health and happiness in a training school. Food must be not only wholesome but appetizingly served, and sufficient time must be allowed for meals. The atmosphere of the refined home should pervade the nurses' dining room and pleasant conversation should be encouraged.

A happy and contented nursing personnel is the best assurance of patients with the right mental attitude, since the nurse is in more constant contact with the patient than any other of the hospital personnel and the attitude of the nurse towards the hospital and its administrators inevitably reflects in that of the patient. The nurse is undeniably an important element in the success of the hospital, and the medical service cannot be effective unless the physicians are able to place implicit confidence in the efficiency and loyalty of the nursing service.

It is a matter of justice that the nurse be made content and happy in her work and loyal to the hospital by providing proper living conditions and quarters and adequate time for both recreation and study, with ample educational opportunities and advantages.

The fact that our patients are guests should always be impressed upon our nurses and also that we must treat them with as much courtesy and kindness as we would extend to those who accept the hospitality of our own home. Young nurses should be taught to realize that the object of a nurses' training school is to educate young women, having the necessary qualifications, in the delicate, noble and self-sacrificing duties of caring for the sick, the highest mission in life open to women.

UNIVENT and Glass – *make the difference*

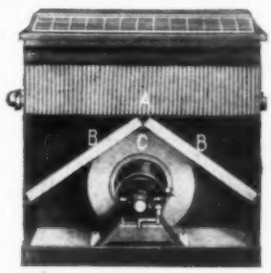


OUTSIDE—a sweeping spray of snow—a whirling wind . . .

But in the hospital ward, an automatically controlled, comfortable temperature—a dust-free, smoke-free, damp-free, stimulating atmosphere.

Just as the window glass lets in light but guards against the elements and keeps out dust and noise—the Univent provides a constant supply of health-giving outdoor air, robbed of its chill and warmed to the exact temperature desired.

Here is the right kind of ventilation—clean fresh air circulation without draft. Ideal for the hospital, where sickroom odors nauseate and stifle—where an open window may mean death to a patient just coming out from under anesthetic. Every ward should be Univent-equipped.



Open view of UNIVENT *illustrating*

A—Copper radiator without a single joint, absolutely leak-proof.
B—Air filter easily removable for cleaning.
C—Cone type fan specially insulated for quiet operation.

UNIVENT
(TRADE MARK)
VENTILATION

There is always an invigorating atmosphere about the hospital with Univent Ventilation—clean, odorless, air that indicates modern ventilation in keeping with the modern equipment and methods of the modern hospital.

Hospital authorities and architects endorse the Univent as the most economical, flexible and easily controlled of all ventilating systems known. Write today for our interesting book of facts on "Univent Ventilation."

Manufactured only by THE HERMAN NELSON CORPORATION, *Moline, Ill.*

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NEW HAVEN	BUFFALO	GRAND RAPIDS	TOLEDO	MILWAUKEE	EMPORIA	SPOKANE	TORONTO
	PHILADELPHIA	DETROIT	INDIANAPOLIS	MINNEAPOLIS	KANSAS CITY	PORTLAND	

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These are a few of the thoughts that come to me in connection with some of the problems confronting us in our work of training young women for the important profession of nursing and I respectfully submit them for your consideration.

WHAT THE STUDENT FUND IS DOING FOR BELLEVUE NURSES

By Zelma Martin, Class of 1927, Bellevue Hospital School of Nursing,
New York

The problem of supervising the appearance of the student body in any large school of nursing has proved to be a vital one. It is quite imperative that every student realize that a neat appearance is one of the essentials of the ideal nurse. From the day of entrance into the school of nursing and during the preliminary period regular inspection of the school uniform is made and because of this, students are particularly careful of their personal appearance. However, after they have been accepted and inspection by those in authority appears less rigid, there is a tendency for a certain percentage of the group to become careless in the matter of uniforms, aprons and personal effects. Of course, such carelessness is not exemplary to new students and reflects discredit on the school.

Most of the large hospital laundries do not launder more than two uniforms weekly, with an additional number of aprons, usually six. The wear and tear of laundry machinery has much to do with lessening the life of the garment and unless some method is devised whereby uniforms can be readily and easily replaced by the individual, untidiness results.

On January 1, 1926, the director of nurses at Bellevue Hospital, New York, instituted a plan that was first submitted to the student body and adopted unanimously. The City of New York allows each student nurse at Bellevue Hospital twenty dollars monthly for uniforms, books and other commodities. From this allowance each student is obliged to deposit five dollars monthly in the student equipment fund. The first deposit made is twenty dollars (the first monthly allowance check), and five dollars monthly thereafter. The routine carried out is briefly described here.

In the school of nursing office is a list for each month for the entire student body. On this list is printed in alphabetical order the names of the students, with space for amount deposited and for each student's signature. Each student signs for the amount deposited and these lists are filed away for records. An account is opened in the ledger for each student and the deposit credited each month. An attempt is made to have all the deposits in not later than the tenth of each month. The money received is then counted and checked with the list to avoid discrepancies, and is deposited in a savings account in one of the reliable banks in New York under the Student Equipment Fund of Bellevue Hospital School of Nursing.

Designated shops are patronized by the students, and if so desired they may purchase any needed article of uniform and charge it to their account. These shops present monthly to the school of nursing office an itemized account for each student, and with the fund on hand, indebtedness is cancelled and charged to each nurse's account.

This system aids in maintaining a tidy appearance, for if the director of nurses requires the students to order new uniforms at once, if their appearance is shabby or untidy, the means are at hand.

Since the students know that the better care taken of the uniform the greater the balance in their account, little difficulty has been experienced in maintaining neatness. When the course is completed, the balance of the account is refunded to each student. In this way thrift is encouraged, and students find it convenient, upon completion of the course, to have this sum towards the purchase of white uniforms. Care is also taken in the school of nursing office to see that the student does not incur debts that are too excessive to be handled by the fund.

For the past twelve months this plan has been worked out with the most successful results, and there has been a decided change in the appearance of the students.

OFFERS FOUR SUMMER COURSES IN NURSING

The University of Chicago will offer four courses in nursing during the summer quarter of 1927. During the first quarter, from June 18 to July 27, two courses, including fields of public health nursing and supervision in public health nursing will be given under the direction of Harriet Frost, supervisor of the department of public health nursing, Pennsylvania School of Social and Health Work, Philadelphia.

The second term, which will be from July 28 to September 2, will include two courses, the teaching of principles and practice of nursing, to be given to Nellie X. Hawkinson, associate professor, University of Chicago, and supervision in schools of nursing, to be given by Anna D. Wolf, associate professor, University of Chicago.

The university also offers several courses in other departments from which electives may be chosen. Opportunity for field observation will be given through the cooperation of various health agencies and organizations, hospitals and schools of nursing in the city.

For further information concerning the courses nurses are asked to direct correspondence to the following departments of the university: Concerning admission to the University Examiner; concerning rooms and house accommodations to the University Cashier; for other information, to the General Correspondence Bureau, University of Chicago.

CENTRAL NURSING COUNCIL HOLDS ANNUAL MEETING

Dr. Franklin C. MacLean, professor of medicine, University of Chicago Medical School, and physician in chief, Albert Merritt Billings Hospital, Chicago, was the principal speaker at the seventh annual meeting of the Central Council for Nursing Education, Chicago, held January 29. Dr. MacLean presented the urgent need for a sounder economic basis for schools of nursing ensuring an adequate preparation for nursing in the community, the hospital and in public health work.

The report of the executive committee, read by Mrs. David W. Graham, chairman, described the work that the Council is doing in promoting hourly nursing service in the homes of the well-to-do in Chicago, in cooperation with the Chicago Nurses' Club and the Registry.

The officers for 1927 are chairman, Mrs. David W. Graham; first vice-chairman, Mrs. Perkins B. Bass; second vice-chairman, Mrs. John W. O'Leary; secretary, Mrs. Ernest E. Irons; treasurer, Edwin G. Foremen, Jr.

Special Designs *for* Hospital Service

Inlaid Numbers

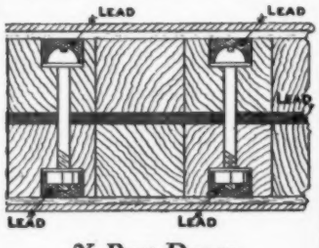
Numbers, letters or designs may be inlaid in Roddis Doors, flush with the surface of the door. Thus no crack or projection exists to harbor dust and dirt.

Observation Openings

Where windows are desired in the doors, observation openings of various sizes and shapes may be provided. Such openings can also be finished and inlaid as desired.

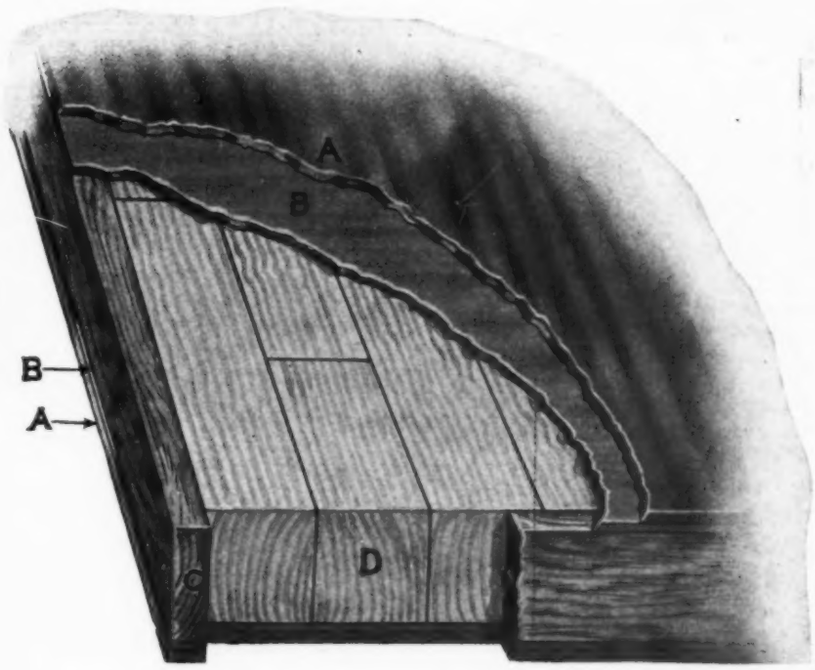
Louvre Openings

The size of the Louvre can be varied to give the required ventilation. Any of these fitments may be used with Roddis Doors, finished in all kinds of woods.



X-Ray Doors

Roddis X-Ray Doors have a continuous lead sheet through their center. Bolts are used to assure permanent alignment. The bolts are buried in lead, as shown. Furnished in any size and finish with lead armament to meet any requirement.



The Construction of Roddis Doors Makes Them

Sound-Proof — Fire-Resistive!

RODDIS DOORS are built up *solid.* The core (D) is made of soft wood strips cut from lumber prepared especially for this purpose. Around the core (top, bottom and sides) is a hardwood band (C) ¾″ thick. This prevents moisture penetrating to the core and adds to the strength of the door.

Over the core, on each side, is a 1/16″ cross-band veneer (B), with its grain running horizontally. This further increases the strength of the door, seals the wood core in a moisture-proof casing, and adds to the fire-resistive and sound-stopping qualities. The cross-band veneer also provides against swelling, shrinking and warping.

The surface veneer (A), with grain running vertically, adds the final touch of perfection. Roddis surface veneers are selected from finest grained woods for their beauty, as well as quality of wood.

The glue used by Roddis is not only impervious to moisture, but it is rock-like in structure when dry.

Not only are Roddis Doors built of the finest lumber, but they are assembled as carefully as is a fine cabinet.

Their sound-proof and fire-resistive qualities make Roddis Doors particularly ideal for hospital service. In hospitals the country over they are giving satisfactory service.

Ask for a copy of the folder, "Roddis Doors for Hospitals".

RODDIS LUMBER AND VENEER COMPANY
MARSHFIELD - WISCONSIN
Branches in Principal Cities

RODDIS DOORS

Made by the World's Largest Producer of

FLUSH···AND···FRENCH···DOORS

DIETETICS AND INSTITUTIONAL FOOD SERVICE

Conducted by LULU G. GRAVES, 7 East 54th Street, New York
and MARY A. FOLEY, Director of Dietetics, Kahler Hospital, Rochester, Minn.

TAKING STOCK FOR THE INDIVIDUAL DIETITIAN*

By Estelle M. Barker
New York

IT MIGHT not be amiss in this day of applied psychology, if the women with home economics training would pause and take stock of their knowledge of some of the first essentials of success and check up to determine just how much this knowledge is being applied in their everyday problems.

We have come to realize that no one road leads to achievement, but that there are many approaches; for instance, the woman doing scientific or research work, the teacher, the administrative dietitian, the woman in the business field and the woman in welfare work are all rendering valuable service and it is quite impossible to say which, if any one of these branches of work is of most value. The important thing to know is that no two individuals function exactly alike and, because of individual differences, that it is quite impossible to standardize human powers and abilities. This idea must be kept in mind in discussing this subject, for frequently we hear the remark that perseverance or some other trait is the key that unlocks the door to success, or, as Disraeli said, "The secret of success is constancy to purpose." A popular author on personal efficiency has said: "The first essential of a successful career is to expect it." Some one else says "cooperation." Innumerable qualities are mentioned by the various authorities dealing with the principles of this subject. Each individual must develop the faculties he needs for balance of power and it is generally a combination of qualities rather than a single quality that is required.

Since success is a subject of extreme breadth, it should be treated in this particular instance according to the usual acceptance of the word, that is, a favorable termination of anything attempted; a result corresponding to the aim of design contemplated. Though this might be the generally accepted meaning of the idea, it is not the general attitude of men, for each person has a definite idea of what constitutes individual success and unconsciously measures others by his own personal standard. This, it may be easily seen, is not fair, for we must take into account that probably no two people have entirely the same development, and while there is no such thing as original inequality, it must be remembered that some of us have started on life's journey before others or have traveled more rapidly along the way.

It is quite improbable that any one person can know just where his neighbor stands in development. Since this is true, and we do not know, let us be slow to judge. What might spell achievement for one man in his particular line of endeavor might be quite unessential to another.

The only achievement that is really worthy of the name has as its motto the word, "Service," and there is only one kind of service that we can render that will permit us to call ourselves real successes. That service is doing for the good of our fellowmen the kind of work we can do best.

Each person is especially fitted for some particular form of service which he can do best and down deep in the inner consciousness each one of us has this inherent belief in his own ability. The feeling of dissatisfaction and unrest so often experienced in daily routine is but a form of the urge or desire for the type of service for which we are particularly fitted to come forth into manifestation. With this thought comes the realization that each one of us has a big responsibility in life. Therefore, the first essential is to determine just what our special talents are.

Right here we have the keynote to a large percentage

The Inventory

ARE you a success in your present position? If not, ask yourself these questions: Am I doing the thing that I want to do? Am I working toward a definite goal? Have I the requisite training and background to fit me for this work that I have chosen?

If you can answer these questions in the affirmative, don't waste precious energy telling people what you are going to do; let your work do that. Remember to "get still" often enough and keep still long enough to keep your perspective. Don't measure your neighbor by your standards. Keep in mind that the most successful people are those who have the understanding heart, those who have a wide range of interests, those who are at peace with the world and have the ability to harmonize their interests and aims with their environment.

*This article was prepared by a hospital dietitian of many years' experience who has achieved outstanding results in her work.

Architect: Walter Everman, Bartlesville, Okla. Plumber: Sell-Orr Heating Company, Independence, Kansas.

Washington County Memorial Hospital, Bartlesville, Okla., another hospital using Clow equipment entirely.

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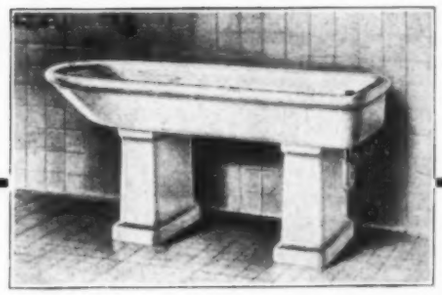
During that period, Clow has not only met the needs of the hospital field successfully—but has actually designed and built new fixtures and fittings especially for use in hydrotherapeutic treatments. The Washington County Memorial Hospital, of Bartlesville, Okla., is typical of the many Clow hospital installations.



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of so-called failures. Many people never really find themselves and become acquainted with their own talents and ability. Why? Because they never become still enough and keep still enough to realize what this inner prompting may be. This right place will become known to every individual desirous of discovering it. We must have daily periods of quiet and meditation if we would comprehend the demands of our own task. There is nothing so much needed in the rush of our present-day life as regular periods of "getting still," getting still mentally as well as physically, relaxing the mind, not falling asleep.

This knowledge may not come at once. Too many of us are in the same predicament as the country lad who felt "called" to preach the gospel. He would have nothing to do with farm life or interests and insisted upon entering the ministry. This he accomplished with considerable difficulty, as he seemed entirely lacking in the requisites of the calling.

Finally after several months of apparent unsuccessful preaching, he was called into conference with the bishop who inquired just what motives actuated the young man to enter the ministry. The young preacher admitted that some years before, when he was at home on the farm, he had had a dream in which there had appeared in the heavens three letters of fire, "G. P. C." His interpretation of these letters was "Go preach Christ." He had decided this at once and without further thought or meditation abandoned everything to accomplish what he sincerely believed to be a call to a definite service. The bishop thought for a few moments and then said, "Are you quite sure that those letters did not mean, "Go plant corn?"

Too much stress cannot be laid upon the importance of finding and filling our allotted places, for in no other way can success be attained. It is most noticeable and interesting that those people who are filling their allotted places are never in a rut. They grow with their jobs and the jobs grow with them. They become specialists early in their careers. The work that is our own is the most interesting and most conducive to enthusiasm. Where is it possible to find a better worker than the person who is enthusiastic about his job? New ideas pertaining to the work that we are doing come readily, if we are where we belong.

But even though we be "square pegs in round holes," we should do our best with whatever we attempt. Our work stands as our record and we cannot hope to advance without a record of good work, no matter where we may be.

Knowing the Right Place

In the pursuit of success we need first the courage of our inner convictions that we know with our "know," as the small boy said, the right thing and the right place for us. It is also well to keep in mind that we cannot and do not desire any one thing or position that belongs to some one else. We may probably desire the equivalent for which some particular possession or position stands, but we must exercise the faith that our good awaits us. That same faith and trust plus the courage to wait patiently represent the power that will bring the condition desired.

The second kind of courage is that needed to face an apparent failure. Many dietitians begin a good work but because of lack of application, energy or stability, they do not carry it to completion. The first step in construction is to look the so-called failure unflinchingly in the face and endeavor to determine what is lacking. Compare the thing as it appears with the ideal held in mind in the beginning. It will be apparent that the two do not tally. Yet the failure was not in the idea but in the working out of the idea. We will soon see where our movements could have been in closer conformity to the ideal and where our procedure was not according to the law of success.

Other dietitians who are really successes in life, by comparing themselves with people who have been more spectacular in their work become discouraged and imagine that they are failures. No matter what condition we may be in we should never indulge in discouraging comparisons.

A common cause of failure is the lack of a vivid, clear-cut picture of the goal. Too often the young woman leaves college with an indefinite idea of the many problems that are included in feeding the human family in its various states of health and disease and consequently has a hazy picture to use as a guide. A hospital dietitian of several years experience was heard to remark, "A woman doesn't know enough to become a successful hospital dietitian before she is thirty-five years of age, and after that she knows better." This rather flippant remark held a heartache and a pathos between the words that definitely admitted either a mistaken calling, an indefinite goal or a lack of preparation.

Keep Definite Goal in Mind

Make the picture of what you want to be and then live up to it and make it real. One well known home economics woman said, "I've always had a definite picture of what I am trying to 'put over' but how it has become splashed and spattered in the doing." It is sometimes advisable to keep the picture well screened from the dust of everyday traffic, treating it frequently with applications of faith, understanding and patience.

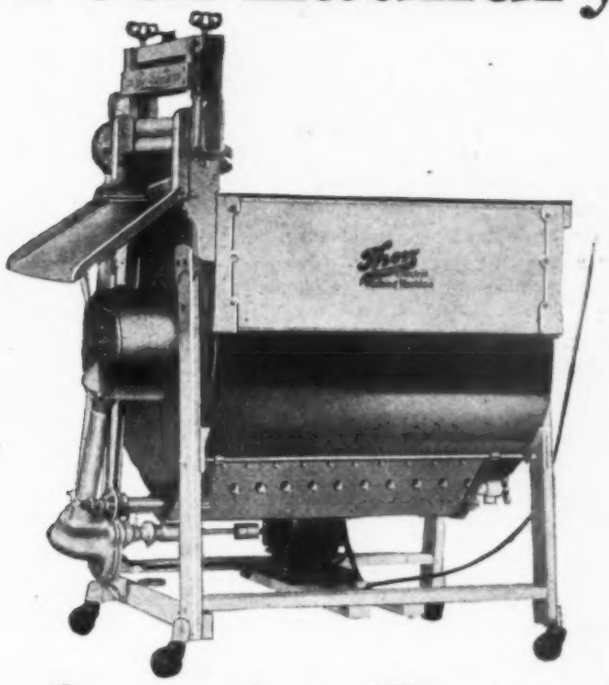
It is well to remember that personal efficiency is absolutely necessary. It is not enough that the motive be right. The mind and hands must be trained to skillful action, the body to the highest capacity. Keen thought, exact observation, accurate memory, a wide range of interest, and great working capacity are required to equip the individual for more than ordinary success in any line of endeavor.

The policy of secrecy is also an asset of incalculable value. To know when to speak and when to hold the tongue is an accomplishment too great for the average mind. It has been said that enough energy is wasted every day in fruitless talk to run the business of the world for a year. This kind of waste must be avoided by all who mean to succeed. There is, however, a deeper reason for reticence. Success is the result of the power to accomplish, and this is the product of ideas.

To develop strength an idea must incubate in the mind until it is full grown. To speak it forth as soon as conceived is like sending a mere child to do a man's work. Think it over, meditate upon it, nourish it with great faith and it will increase in wisdom and finally become a power. To do this successfully, learn the art of keeping still. One can always speak with safety of what has been done but not always of what is to be done. To reveal a plan of action in advance is often to array against you every possible opposition, visible and invisible. Keep your own counsel and do the work and the results will speak louder for themselves than you could possibly speak for them. "A still tongue maketh a wise head," and a wise head clears the way for the worker to a marvelous degree. "The circle of human life is to know, to will, to do and to keep silent."

So we come to see that success is not the mere getting of things. The blessing of success is the ability to harmonize ourselves with our environment.

Save Money in Your Laundry



Both Investment and Operating Expense

Thor heavy duty laundry machines require no installation expense or skilled operators.

HERE is a practical way to effect a big saving. These Thor Hospital Laundry Machines are made for continuous, heavy duty operation. No installation is required. They may be connected to any electric convenience outlet anywhere. They take little space and turn out a great volume of work. They are surprisingly economical to operate. For instance, at an average hospital electric rate of 5 cents per kilowatt hour, the cost of operating the Thor 28 washer for a full eight hour day will be only 10c.

The Thor Hospital Washer is equipped with an attached gas heater below the tub to keep the water at a uniform heat. The washing method used is Thor's high development of the famous, gentle cylinder principle. It is fast, thorough and saves clothes. In fact Thor's refinement of the cylinder method is now used by dry cleaners and laundry experts everywhere. By its gentle, thorough cleansing a Thor Hospital Washer will make linens and nurses' garments, etc., last far longer and save replacement costs.

Even Hospitals having large, built in equipment can effect savings by the use of Thor equipment for those pieces requiring more careful laundering—and for quick, emergency calls for freshly laundered, sterilized linens, etc.

Perhaps one Thor Washer and one Thor Ironer may meet all your needs. Or, if your requirements are greater, two or three or more sets may be needed to handle the work. But in any case you have the advantage of most economical flexibility in machine capacity at all times. One operator can handle two or more washers as easily as one washer alone. Any inexperienced help may be used. No skill whatsoever is required.

Thor Hospital Ironers

These are furnished in either of two sizes: No. 75 with a 44" roll (heated by gas, electricity or gasoline), and No. 90, with a 50" roll (heated by gas or gasoline). Each is built for continuous, heavy duty hospital laundry service. Thor ironers likewise require no skill in operation. Any inexperienced low priced help can use them satisfactorily. The user merely sits before the ironer and guides the pieces through. There are no pedals or levers to operate. Everything is simple and entirely automatic.

Capacity Per 8-hour Day Thor Heavy Duty Washer

2952 Napkins
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or
1368 Pillow Cases
or
696 Bath Towels
or
384 Single Sheets
or
any combination of foregoing or other articles to equal 432 pounds, dry weight, per day.

Satisfaction Guaranteed

Each Thor Heavy Duty Hospital Laundry machine is covered by an absolute guarantee. Experience in many thousands of institutions has proven their complete dependability and satisfaction to users. You can be sure that Thor equipment will soon save more than its remarkably moderate cost. We can also arrange convenient terms if desired.

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Send for detailed information regarding Thor Hospital Laundry Machines, the low costs and other advantages. We will gladly mail this without obligation on your part.

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Please send full information, prices, etc., on Thor Heavy Duty Hospital Laundry Equipment.

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THE RELATION OF GOOD COOKING TO HEALTH

"Good cooking is a moral agent. By good cooking I mean the conscientious preparation of the simple food of everyday life, not the more or less skilful concoction of idle feasts and rare dishes. Conscientious cookery is an enemy of gluttony. The trained delicacy of the palate, like a cultivated delicacy of sentiment, stands in the way of unseemly excesses. The decency of our life is for a great part a matter of good taste, of the correct appreciation of what is fine in simplicity. The intimate influence of conscientious cooking by rendering easy the processes of digestion promotes the serenity of mind, the graciousness of thought, and that indulgent view of our neighbors' failings which is the only genuine form of optimism. Those are its titles to our reverence.

"A great authority upon North American Indians accounted for the sombre and excessive ferocity characteristic of these savages by the theory that as a race they suffered from perpetual indigestion. The noble Red Man was a mighty hunter but his wives had not mastered the art of conscientious cookery."—A preface to "A Handbook of Cookery for a Small House," by Jessie Conrad.

HELPING TO SOLVE THE WEEKLY FISH PROBLEM

Serving fish on Friday is a problem in many hospitals, particularly in inland regions where the supply of fish is small, the quality doubtful, and the variety non-existent. Accordingly, dietitians and stewards will welcome a new process that has been effected by which it is possible to prepare fish in such a way that it can be shipped to distant points and be received in such a condition that it rivals fresh fish. Through this new process, ocean fish, with its firm texture, and delicate and distinctive flavor, can be served at a reasonable price on distant tables.

Methods of handling foodstuffs are slow to change and it is almost startling to visit this fish packing plant. It seems improbable that it is a fish house, as the intensive odor usually associated with visits to fish houses is happily missing. Employees in white uniforms demonstrate the plant skinning and boning processes, which are done mechanically.

First of all one sees the fish coming in on small wagons from the docks on the other side of the street, where the boats land them and the fish are washed. Upon reaching the plant they are placed in a cold room and from there, after another washing, they are run directly through the skinning and boning machine, of which there are two types, one for flat and another for round fish.

The fish are then cut by the machine into standard size fillets (which run from three to five to the pound) and are packed in cartons with a layer of paper separating the fillets. The remaining fish is mixed with a "juice" prepared from the fish bones and salt and pressed together into a loaf, which is cut into one and five pound packages. After the fish is in the carton it is "frosted" for a few moments at a temperature of 50 degrees below zero. This quick freezing prevents any breaking of tissue which a slower freezing may cause.

The cartons are then stored in a room where the temperature is kept at zero until ready for shipment. Packing is done in insulated cartons and when the fish is received many days later at a distant city it may still be "frosted," provided that the weather has not been too warm. When the fish arrives at the point of distribution it should be treated like any fresh fish. It should be used as soon as possible, and between arrival and cooking should be kept in a cold room or refrigerator.

The bacteria content of the fish while still frozen average 500 per cubic centimeter, which is about that of a pure water supply. When frosted it is in as good a bacteriological condition as when it reached the dock. After being refrosted, it undergoes, of course, the same changes that fresh fish does under the same circumstances. Naturally, it should be used as soon as possible after receipt.

Exactly the same method of cooking may be used for the fillets as for the usual type of fillets. The pressed loaf may be cut down like scrapple and treated just as are the fillets. It is in a form that may be easily used in the preparation of chowder, balls and creamed dishes. As there is no waste in either type of fish, the price per portion will be comparatively low.

COOKERY OR QUACKERY?

"No virtues will avail for happiness if the righteous art of cooking be neglected by the national conscience. We owe much to the fruitful meditations of our sages, but a sane view of life is, after all, elaborated mainly in the kitchen—the kitchen of the small house, the abode of the preponderant majority of the people. And a sane view of life excludes the belief in patent medicine. The conscientious cook is the natural enemy of the quack without a conscience; and thus his labors make for the honesty, and favor the amenity, of our existence. For a sane view of life can be no other than kindly and joyous, but a believer in patent medicine is steeped in the gloom of vague fears, the sombre attendants of disordered digestion."—"Last Essays," by Joseph Conrad.

MINNESOTA DIETITIANS ELECT NEW OFFICERS

Winifred Howard, dietitian, Ancker Hospital, St. Paul, is the new president of the Minnesota Association of Hospital Dietitians. The other officers elected are vice-president, Edena Zavitz, Northern Pacific Hospital, St. Paul; recording secretary, Ethel Swanson, Mounds Park, St. Paul; corresponding secretary, Lois Hurlbutt, General Hospital, Minneapolis, and treasurer, Louise Marty, Asbury Hospital, Minneapolis.

The program of the last meeting was given over mainly to a review of new dietetic books. This was followed by a round table on "New Dishes and Menus" and dinner at the Nicollet Hotel.

DESIGNS FOOD CHART FOR STUDENT NURSES

A chart showing the relation of food to the body has been designed by Fairfax Proudfit for use in her classwork with nurses. Important points are briefly summed up under the following headings:

Factors Influencing the Food Requirements.
Daily Food Requirements for Children.
Daily Food Requirements for Adults.
As They Function in the Body.
Form in Which They Occur in the Body.
Average Elementary Composition of the Body.
Form in Which they Occur in Foods.
In Terms of Common Food Materials.
Building the Menu for the Day.

This chart is more comprehensive and of more value to the nurse than a notebook, such as is usually kept, and the nurse has the assurance that it is accurate.

This type of food truck is being used with excellent results in the Wilkes Barre City Hospital.
Elmer E. Matthews, Supt.

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HOSPITAL PANTRY ELECTRIC TRUCK

Table made of heavy tinned copper with polished Nickel Top.

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Sliding Doors.

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Maximum Current Consumption, 3000 watts.

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Now made to suit any size hospital

With the Giant you can mix anything from a few egg whites, which call for mixing at high speed, to a bowl full of heavy dough demanding steady mixing at low speed. The Giant will whip potatoes a fine fluffy white, make purees, apple sauce, slice any thickness of fruit or vegetable, crumb bread, rub up cheese, grind meat, grind coffee and spices, and grinder is adjustable to any degree, fine or coarse, while running. Mix cake or bread doughs. The Giant, made in several sizes, is the one money saving kitchen machine for use in hospitals.

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HOSPITAL EQUIPMENT AND OPERATION

With Special Reference to Laundry, Kitchen and Housekeeping Problems

Conducted by C. W. MUNGER, M.D., Director, Grasslands Hospital, Valhalla, N. Y.

SUPPLYING THE EQUIVALENT OF SUNLIGHT FOR TREATING CHRONIC DISEASES

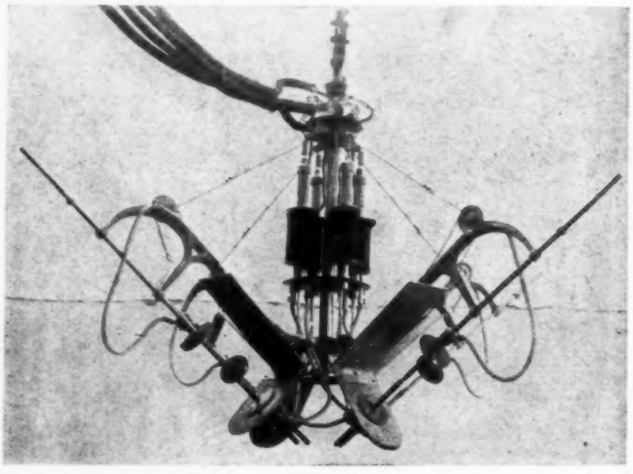
By R. Plato Schwartz, M.D., Department of Surgery, School of Medicine and Dentistry, University of Rochester,
Rochester, N. Y.

SINCE 1903 the use of sunlight has become an established therapeutic procedure. The physical characteristics of the solar spectrum have, by accepted experiments, been related to certain defensive and protective reactions of living tissue. We continue, however, to build new hospitals and supervise old ones without making any provision for giving patients the radiation that prevents deficiency diseases and is an essential stimulus for protection against infection and toxemia.

The omission of such provisions may be assigned to a combination of influences rather than to a specific cause. Some hospitals aim to do no more than provide accepted therapeutic measures, while many others attempt to lead the way toward the improvement of old procedures and the discovery of more effective methods of treatment. It is not often the unwillingness of the hospital administrator that prevents adequate provision for the welfare of the patients for whom he is responsible. His caution, fostered by the sad experience of having expensive equipment thrown into the discard, justifies his demand for the presentation of conclusive evidence of the results to be obtained from any form of treatment that requires alteration in present construction and the installation of new apparatus.

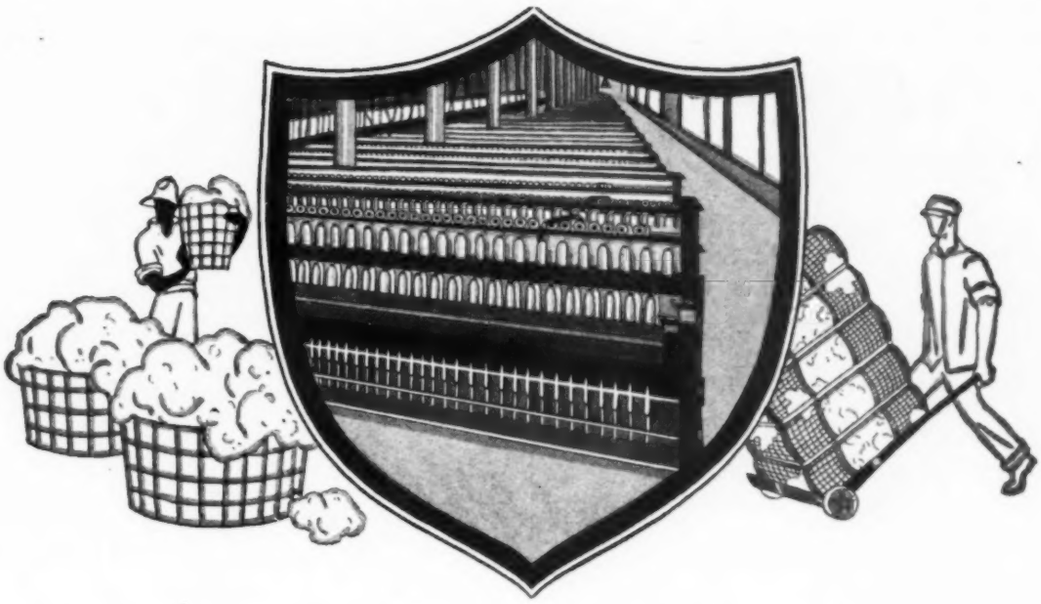
The enthusiasm that accompanies the development of new forms of treatment, has, throughout the history of medicine, lead to claims of merit that were unsupported by available figures or carefully recorded observations. This detrimental influence has followed heliotherapy and still threatens to create illusions relative to the beneficial limits within which radiation from the sun, or its physical equivalent from an artificial source, can be employed. However, a critical study of the literature and the observation of patients under treatment reveals that fundamental reactions essential to recovery from chronic diseases are more consistently induced and with greater certainty continued than when such radiation is withheld.

The increasing application of sunlight and the reports of work done by authorities in every country where it is used indicate that this premise has been accepted. Sunlight has been used, as extensively as prevailing climatic conditions would permit, at altitudes varying from 4,500 feet at Leysin, Switzerland, to sea level at Haling Island, England, and intermediate inland elevations, such as Perrysburg, N. Y., 1,400 feet, which is remote from the influence of the ocean. Although these locations represent wide variations in altitude and weather conditions, the clinical evidence gathered over a period of twenty-three years reveals that solar radiation has a greater therapeutic value than does radiation from other available sources. It should be emphasized that sunlight has been the only factor common to the treatment of patients of varying complexions and of different nationalities. The futility of attempting to benefit the greatest number of patients who need this form of treatment in the United States is apparent when the amount of available sunlight is considered in relation to our centers of population. If such relationship provided an adequate dependable amount of radiation from this natural source the benefits to be derived would justify the required alterations in present hospital construction. Unfortunately, our climatic conditions and hospitals within crowded cities are deciding factors that force attention to an artificial source of radiation to furnish an adequate substitute for sunlight.



Hospital unit with which twenty to thirty patients may be treated simultaneously.

It is emphasized here that such a source must reproduce the physical characteristics of the solar spectrum. This point of view is supported by the following facts: 1.



Reason No. 2 for Standardizing on Pequots

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IN each individual thread of a Pequot sheet is an explanation of the extraordinary Pequot durability.

Scores of fibres from carefully selected long-staple cotton have been spun together into thread of exceptional strength. Each Pequot thread is uniformly round and even.

The spinning of thread for Pequot sheets is a real triumph of skill and patient ingenuity. Extra care goes into every spinning process and it shows in the extra wear that Pequots give under strenuous hospital service.

You can safely standardize on Pequots. Their quality rests on the firmest foundation—years and years of experience, years and years of manufacturing with ideals.

Made by the Naumkeag Steam Cotton Company, Salem, Mass. Parker, Wilder & Co., New York and Boston, Selling Agents.

STANDARDIZE ON

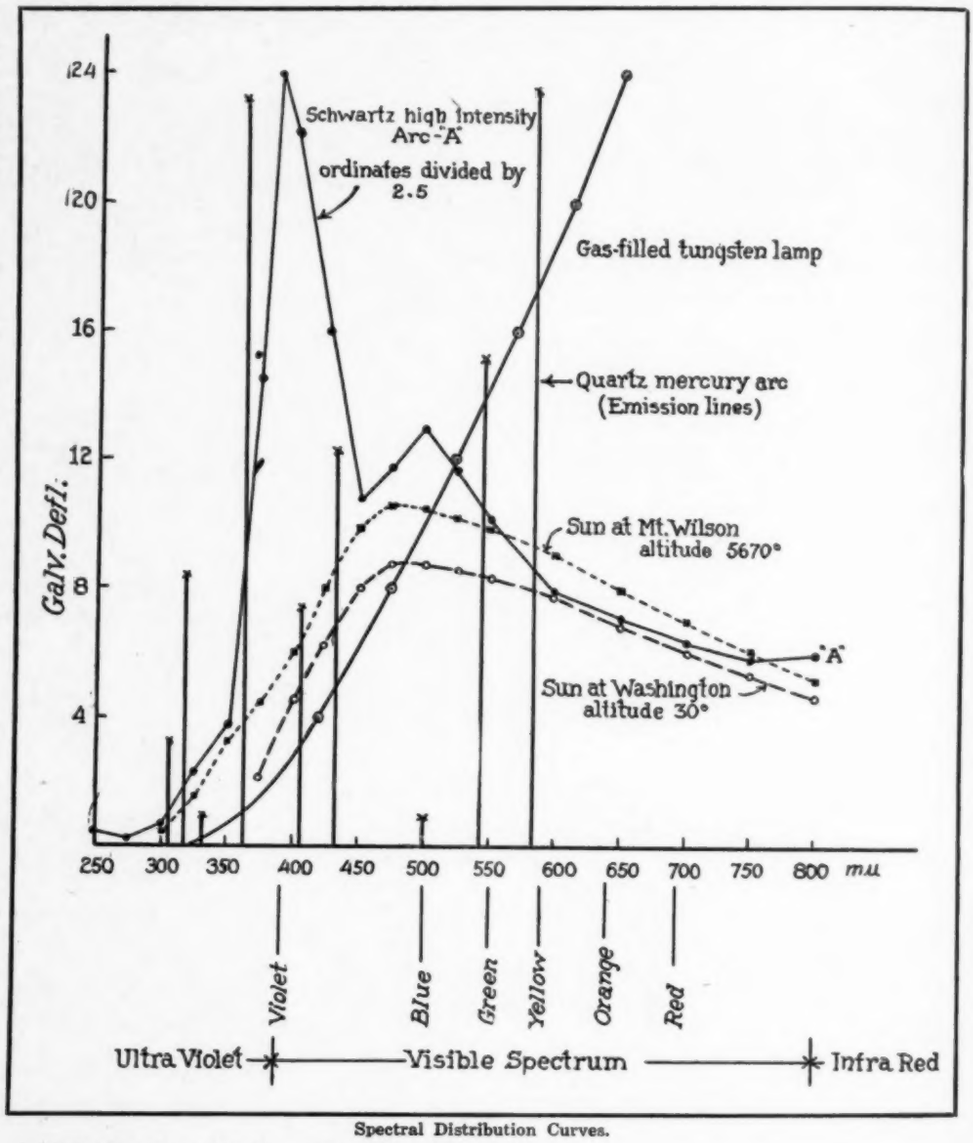
PEQUOT
SHEETS
AND
PILLOW CASES

REG. U. S. PAT. OFF.

All plant and animal life, with but few exceptions, developed under the influence of sunlight. 2. Consistently beneficial clinical reactions have been observed under the above mentioned conditions over a period of twenty-three years. 3. Carefully controlled experimental work has revealed that different but equally fundamental reactions are produced when living tissue is stimulated by various regions of the solar spectrum.

A mechanism designed for this purpose must also fulfill the following requirements: 1. It must provide for the simultaneous treatment of from twenty to thirty patients at a moderate cost per patient. 2. It must be sufficiently simple in mechanical and electrical construction for operation by nurses and attendants. 3. Its initial cost plus maintenance must be such as to make it available for all hospitals where patients suffering from chronic diseases are treated. 4. Smaller units should be provided for the treatment of individual patients. 5. The design of such equipment must make it possible to radiate the entire cutaneous surface of patients, in the same manner as when sunlight is used, and its installation should require minimum changes in hospital construction.

These are the problems confronting the executive who seriously considers the use of the equivalent of sunlight. They prevailed, therefore, when the Taft heliotherapy ward of the Cincinnati General Hospital, Cincinnati, was opened on October 13, 1924. The physical equivalent of sunlight was not available from any lamp made at that time. It was necessary to design and perfect a lamp which would meet the requirements. The success of this undertaking was made possible by the philanthropy of Mr. and Mrs. Charles P. Taft and the cooperation of Dr. George J. Heuer, Dr. A. C. Bachmeyer, I. H. Weisbrod, and others including manufacturers of electrical apparatus.



Spectral Distribution Curves.

High intensity carbon arc
Sunlight at Mt. Wilson
Sunlight at Washington, D. C.
Mercury arc in quartz (emission lines)
Gas-filled tungsten filament lamp

The hospital unit, illustrated here, consists of four arcs arranged in a circle around a central support. This is suspended by a cable over pulleys and attached to a counterweight to facilitate raising and lowering the lamp for treatment and adjustment of carbons, respectively. The inclination of the arcs is adjustable to an angle parallel to the plane on which the patients recline while receiving treatment. Such a plane is provided by moving patients' beds to the treatment circle, which should be sixteen feet in diameter. The foot of each bed is removed and the end dropped to the floor at the circumference of the circle. It must be emphasized that special beds are not needed to facilitate the ease with which this procedure may be carried out.

With the lamp suspended eight feet above the center, and the arcs parallel to the bodies of the patients, there is an essentially equal distribution of radiation at an angle of 90 degrees throughout the entire circle. By this arrangement the maximum amount of radiation produced is used for treatment. Each pair of carbons is automatically controlled by a chain and pulley mechanism connecting the magnet plunger to a friction clutch on the upper carbon holder. This assures smooth and quiet operation of the arcs at optimum width. Each arc operates at 90 amperes on a 220 direct current. The four arcs are divided into pairs, each pair being controlled by separate resistance units while the total amperage and voltage of each separate arc is recorded on respective meters.

With adequate space and proper arrangement, thirty

CRESCENT
Automatic
DISHWASHERS

MORE than 19,000 installations of Crescent Dishwashing Machines in leading Hotels, Restaurants, Hospitals, Schools, Bank and Factory Cafeterias sum up, briefly but eloquently, Crescent's 35 years of Leadership in this special field.

This unquestioned Leadership is naturally based on the one factor that gives Leadership—Superiority. A few Superior Crescent Features are:

1. *No clogging of nozzles—nozzles are 50 times larger than average spray hole or slit.*
2. *Wider Dish Racks — washing more dishes at one time.*
3. *A Wash and Rinse that produces absolutely Clean Tableware.*
4. *Great Reduction in Breakage—Dishes in the Rack do not Move.*
5. *Pump outside of Wash Water, permitting oil or grease lubrication and the use of Ball Bearings.*
6. *Revolving Wash Arms (an Exclusive Crescent Feature), along with greater nozzle concentration of water.*
7. *Dishes rinsed by Scalding Shower of Water Fresh from the Boiler.*

The Crescent does not *spray* the dishes. It cuts, strips and *scrubs* away all food and grease.

Double Revolving Wash Action most efficient known. Mass, Force and Motion Combined. Exclusively Crescent!

Crescent Dishwashers are preferred by those who have investigated because of their remarkable speed, thoroughness—and their economy of space. Their flexibility in connection with Crescent Loading Platforms permits as few or as many persons at the scrapping tables as the occasion requires.

Crescents are built in Seven Sizes (a size for Every Kitchen), with capacities ranging from 1500 to 18000 Dishes per hour.

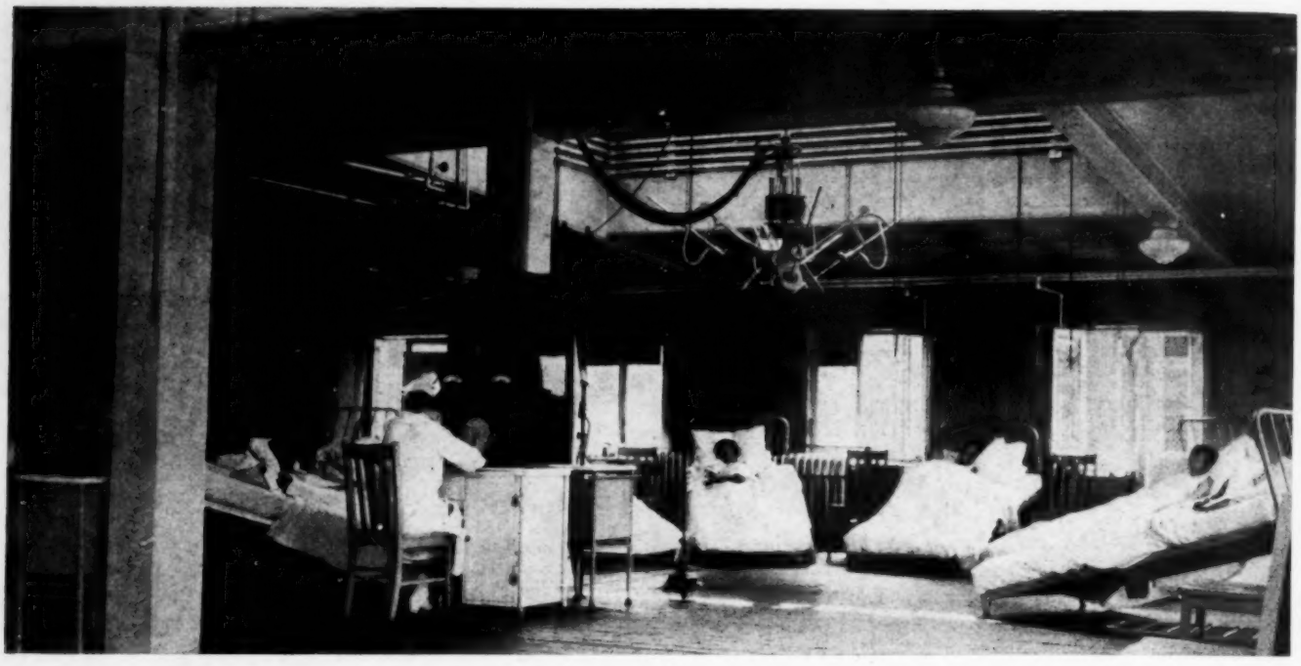
Write for Booklets telling about Crescent Dishwashers and Correct Dishwashing. - - Address Dept. J300.

CRESCENT *Automatic* Dishwashers

CRESCENT WASHING MACHINE DIVISION of *The* Hobart Manufacturing Co.
New Rochelle... N.Y.

Canadian Headquarters *173 King Street, East.. Toronto.*

J300

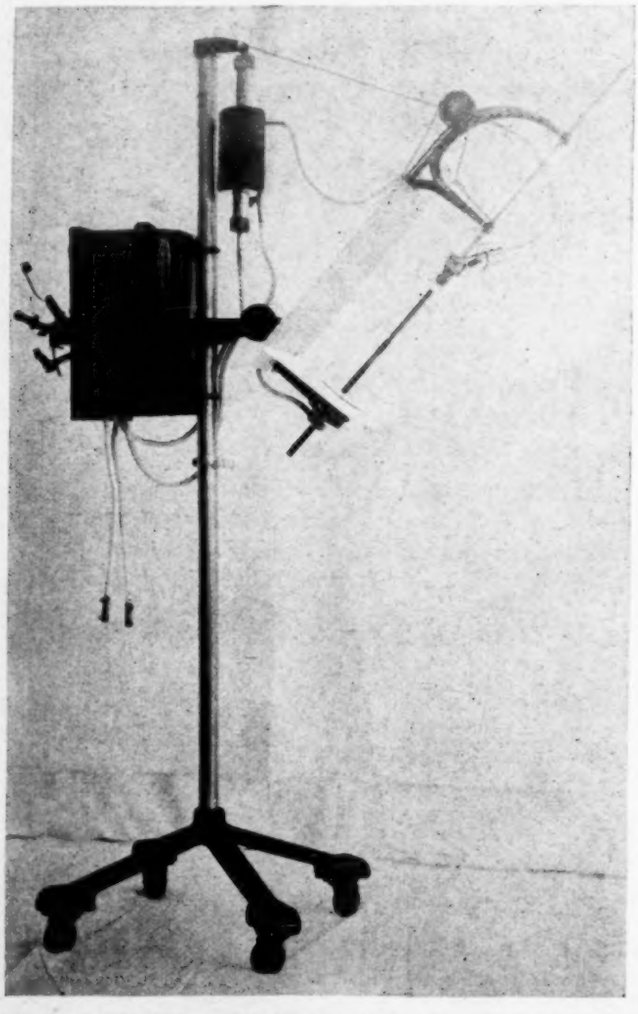


Taft Heliotherapy Ward, Cincinnati General Hospital, Cincinnati, showing patients ready for treatment.

patients can be treated simultaneously. Treatment usually consists of graduated exposures with increasing duration until a maximum of two twenty-minute periods are given daily, except Wednesday and Sunday. The actual cost of operation at varying rates per kilowatt hour for current used, including the cost of carbons, is given in the following table.

Price per K.W. hr...	.02	.03	.04	.05	.06	.07	.08
Small unit	.13	.17	.20	.23	.27	.30	.33
Hospital unit	.53	.67	.80	.93	1.07	1.20	1.33

In this connection it must again be emphasized that radiation is provided for the entire body of each patient, identical to the exposure of the whole cutaneous surface when sunlight is used. The arrangement of patients for treatment and the small unit mentioned above, are here illustrated.



Small unit with which one to three patients can be treated at one time.

The measurements of the intensity distribution throughout the various regions of the spectrum from this arc were made for comparison with similar measurements of the solar spectrum by Dr. W. W. Coblentz, chief physicist, United States Bureau of Standards, Washington, D. C. The curves reveal the intensity of radiation from these respective sources, and include similar measurements of radiation from the mercury arc in quartz and the gas filled tungsten filament lamp.

It should be noted that the curve of the carbon arc reveals a striking similarity to that of sunlight. The solar curves represent the intensity of radiation obtained under ideal atmospheric conditions. These curves therefore represent a greater intensity than that which usually prevails when sunlight is available for the treatment of patients. It should be noted that the curve representing radiation from the high intensity carbon arc gives a much greater intensity in the ultraviolet and visible regions to (550 mu) the green than is present in sunlight under the most ideal conditions at Mt. Wilson, altitude 5,670 feet. This is also true in the infra-red region. The region from the green (550 mu) to the infra-red is of greater intensity than that of sunlight at Washington, D. C., altitude 30 feet.

It should be observed that the ordinates representing the radiation from this arc are divided by 2.5. The widely separated emission bands forming the spectrum of the mercury arc in quartz are presented by the vertical lines.

"Better Than Natural Daylight!"

as a clear day in June is better than a cloudy day in January

Operating Room
Boston Lying-in Hospital

Note: The window curtains used during all operations.

COOLIDGE & SHATTUCK, *Architects*
Installed by HIXON ELECTRIC CO.

Labor Room, Maternity Hospital, Cleveland

(One of 10 rooms with Macbeth "Daylight Windows")

ABRAM GARFIELD, *Architect*
CLARK MACMULLEN & RILEY, *Engineers.*
Installed by HATFIELD ELECTRIC CO.

Operating Room, Vanderbilt University Hospital, Nashville, Tenn.

COOLIDGE, SHEPLEY, BULFINCH & ABBOTT, *Architects*
HIXON ELECTRIC CO., *Engineers.*
Installed by SANBORN ELECTRIC CO.
(Macbeth Daylighting in Operating Rooms & Autopsy Room, Embalming Room and Amphitheatre.)

Top Center:
Operating Clinic Maternity Hospital, Cleveland

(3 other operating rooms similarly equipped.)

The color quality of daylight has particular and important advantages over ordinary artificial light. Under daylight, skin and flesh colors are always seen naturally, quickly and without effort or uncertainty. Macbeth Daylighting is a satisfying visual reproduction of good natural daylight produced with standard clear glass incandescent electric lamps and accurate colored glass filters.

By omitting the expensive skylight and unduly large windows (note the Boston and Cleveland illustrations above) this equipment becomes exceedingly moderate in cost.

Can the hospital afford not to have a superior lighting equipment that costs as much as sterilizing apparatus and does not cost more during an operation than the ether administered at the same time? Macbeth Daylighting, now ten years on the market, has been approved and is used by thousands of color experts in widely varying fields where "seeing as in daylight" is important.

Not a lamp, but a lighting system adapted to the location

Send particulars as to size of room, height of ceiling with wall and ceiling structural conditions.

The effect of this artificial daylight cannot be adequately or intelligently described. If you see it you won't need a description—you realize instantly that it is different and more eye-satisfying than any other artificial light.

Can now be seen in:

Boston Lying-in Hospital.
Physicians' Hospital, Plattsburgh, N. Y.
(4 operating and 2 delivery rooms, autopsy and anatomical rooms, and portable lamps for bedside diagnosis and dressing operations.)
Spencer Hospital, Meadville, Pa.
(Two operating rooms)
Strong Memorial Hospital
University of Rochester, Rochester, N. Y.
Vanderbilt University Hospital & Medical School, Nashville, Tenn.
(Operating rooms, autopsy room, embalming room and amphitheatre.)
Western Reserve & Lakeside Group
Cleveland, Ohio
Babies' & Children's Hospital
Maternity Hospital & Medical Building
(6 operating and 10 delivery rooms, Pathology lecture room and 200 microscope daylight illuminators.)

Macbeth Daylighting Company, Inc.
Manufacturers of equipment for the scientific reproduction of daylight
235 West 17th Street NEW YORK

Patient Welfare DEMANDS CHAMBERLIN Weather Strips

Alameda Sanitarium, Alameda, Calif. Equipped throughout with Chamberlin Weather Strips. Every window and door frame is also calked with Chamberlin Plasti-Calk. Edward T. Foulkes, Archt., San Francisco, Calif. Vogt and Davidson, Gen. Contrs.

PATIENT welfare demands the permanent protection which Chamberlin equipment provides. At an accumulated total of over 20,000,000 windows and doors, 34 years of performance have proved conclusively that Chamberlin Weather Strips bar draughts, dust, rain and snow—deaden street and corridor noises—and serve as a *permanent* aid to even, uniform heating. Inspections of installations made as far back as 1893 show that Chamberlin weather stripping equipment gives efficient service for years after installation. Chamberlin Weather Strips are correct in design and are installed exclusively by Chamberlin mechanics trained and supervised to work to the exacting Chamberlin standard. Chamberlin assumes permanent responsibility and guarantees and services its equipment "for the life of the building".

Write for Chamberlin Literature

CHAMBERLIN WEATHER STRIPS
"SINCE 1893-THE STANDARD"

CHAMBERLIN METAL WEATHER STRIP COMPANY
West Lafayette Blvd., Detroit, Michigan
100 Sales and Service Branches throughout the United States

FC-160

It is easily seen that this spectrum is not continuous; it predominates in the ultraviolet; it has but little radiation in the visible and relatively none in the infra-red. The mercury arc in quartz, therefore, fails in the production of the essential characteristics of the solar spectrum that are revealed in the curves on the same chart.

The intensity curve of radiation from the gas filled tungsten filament lamp shows a marked deficiency in the ultraviolet with maximum intensity in the orange and red regions. This means that these lamps emit "practically no ultraviolet radiation that may be injurious to the eye or be of use in photochemical work." It is obvious, therefore, that this most useful source of illumination cannot be accepted as a substitute for the solar spectrum.

1. Sunlight has been used as a therapeutic agent for twenty-three years. Clinical results have shown that patients suffering from chronic diseases improve more rapidly and with greater certainty when given systematic graduated exposures to sunlight than when this stimulus is withheld.

2. Sunlight is never controllable; the location and architecture of present hospitals make its use most difficult when it is available. These difficulties have defined the indications for a mechanism that will reproduce the physical characteristics of the solar spectrum for use in the treatment of chronic ailments.

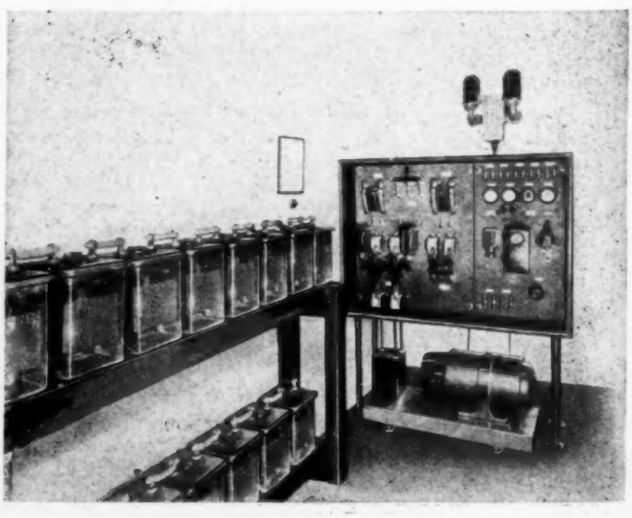
3. A high intensity carbon arc lamp has been developed to reproduce the physical characteristics of sunlight more closely than other sources of radiation that are now available.

4. This lamp has been in use on the Taft heliotherapy ward, Cincinnati General Hospital, Cincinnati, since April, 1925. The reactions obtained by radiation from this high intensity carbon arc have been in keeping with those that follow when sunlight is used.

AUTOMATICALLY CONTROLLED LIGHTING SYSTEM FOR EMERGENCIES

To insure against the interruption of service of electrical apparatus an emergency lighting system has been designed for use in hospitals and other institutions where operating conditions require uninterrupted usage. In case the main power source should fail, this system instantly takes over the load and carries it for a sufficient time to finish the operation in process and provide lighting service for several hours.

The system has several different sources of supply, the regular power supply, a special heavy-duty glass jar stor-



When life depends upon your skill

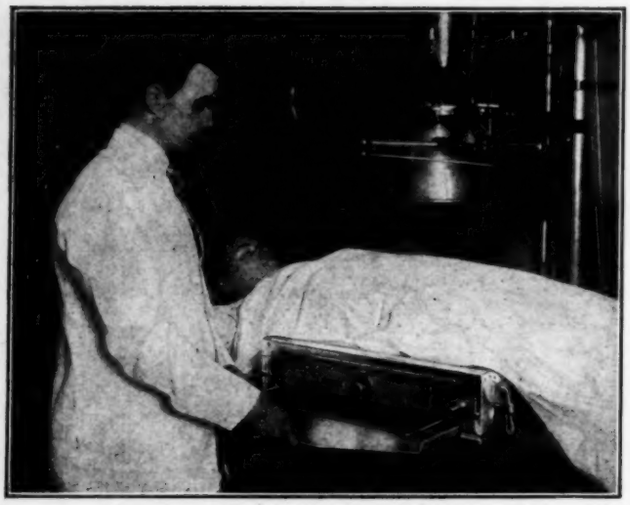
THOSE precious moments when all your faculties must be concentrated upon the technic of the operation you are performing should not be marred by a single doubt. Your trust in your assistants is a guarantee that your implements have been properly sterilized. *But to what extent can you depend upon your ligatures?*

For thirty years Armour Laboratory has kept pace with the increasing and more exacting demands of medical science. The ligatures it is supplying hospitals throughout the world are reputed to be the finest produced. The great resources of this institution make it possible to apply extraordinary skill to the selection of material and the production of ligatures. They are strong — smooth — sterile and uniformly absorbed. You can use these ligatures with absolute confidence!

When you have cases indicating the use of pituitary liquid, you may have equal confidence in it if it bears the Armour label.

ARMOUR AND COMPANY *Chicago*

PHARMACEUTICAL PRODUCTS



Screen Technique Progresses with Patterson Research

UNIFORMITY, pliability, freedom from lag, grainlessness, cleanability, adaptability to single or double screen technique—if an X-Ray Intensifying Screen has these characteristics it *must* be a Patterson. They are the result of Patterson research.

The Patterson Screen Company pioneered the art of Fluorescent Screens and their product is the accepted standard throughout the world.

Write for Free Test Screen

A sample Patterson Intensifying Screen of liberal size will be sent without charge to roentgeneologists who wish to test its speed, grainlessness, freedom from lag, and cleanability.

Patterson
X-RAY
Screens

PATTERSON SCREEN CO.

Dept. M.H. **Towanda, Pa.**

age battery, and the motor generator itself. The battery and auxiliary apparatus, which will carry the load for a period of eight hours, is kept charged by the motor generator set, which is operated from the regular power lines on an individual circuit.

An automatic time switch is arranged to start the motor generator set at regular intervals every day. The time clock also automatically operates all of the equipment on the system panel at regular intervals, insuring that switches will not corrode through lack of use and permit failure during emergency.

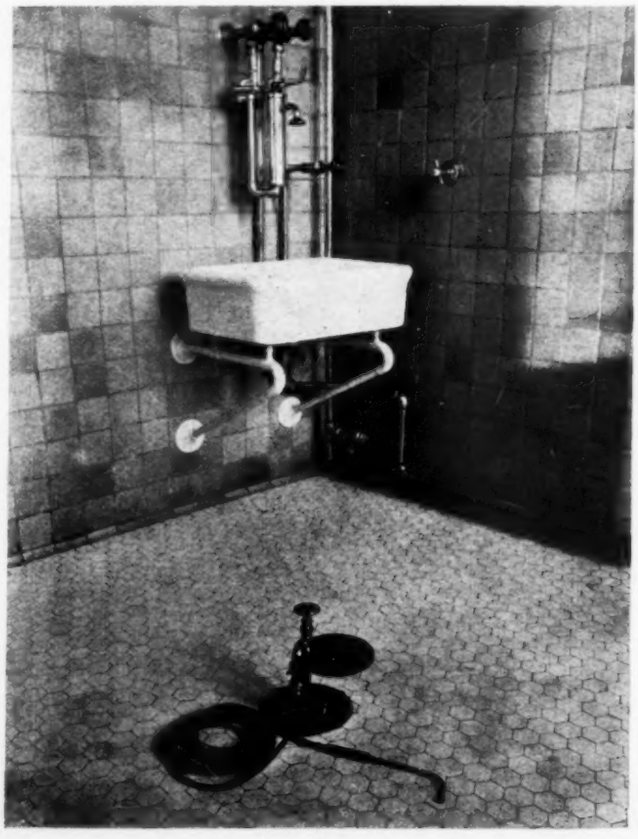
All the control equipment is mounted on one panel and the entire system is contained in one compact installation, all the switches and controlling mechanism being mounted on one switchboard and the battery upon benches erected adjacent to the rest of the apparatus. Wiring consists of connecting the motor generator, the battery control switch, alarm circuits, power supply and the branch circuit to the panel board.

A signal system, which is provided as an integral part of the apparatus, consists of red and green lamps and an indicating motor all furnished in one unit to be installed wherever the electrical inspector directs. Six leads are required, run directly to the panel board and connected to the terminals designed for them.

A push-button on the panel permits testing the operation of the entire system in less than one minute.

A SURGICAL ASPIRATOR

To facilitate aspiration during surgical operations a surgical aspirator has been devised to promote continuous withdrawal of fluid from the cavity. A valve in the wall supplies cold water to the aspirator at a point below the floor level. The upright aspirator with control valve at the top is coupled to the drain opening. The valve can



Where Experience Counts Double!

In rapidly developing industries, experience counts double. Those companies that helped to start the ball rolling, who have been pushing it ever since, know more about ball rolling than those just falling into line.

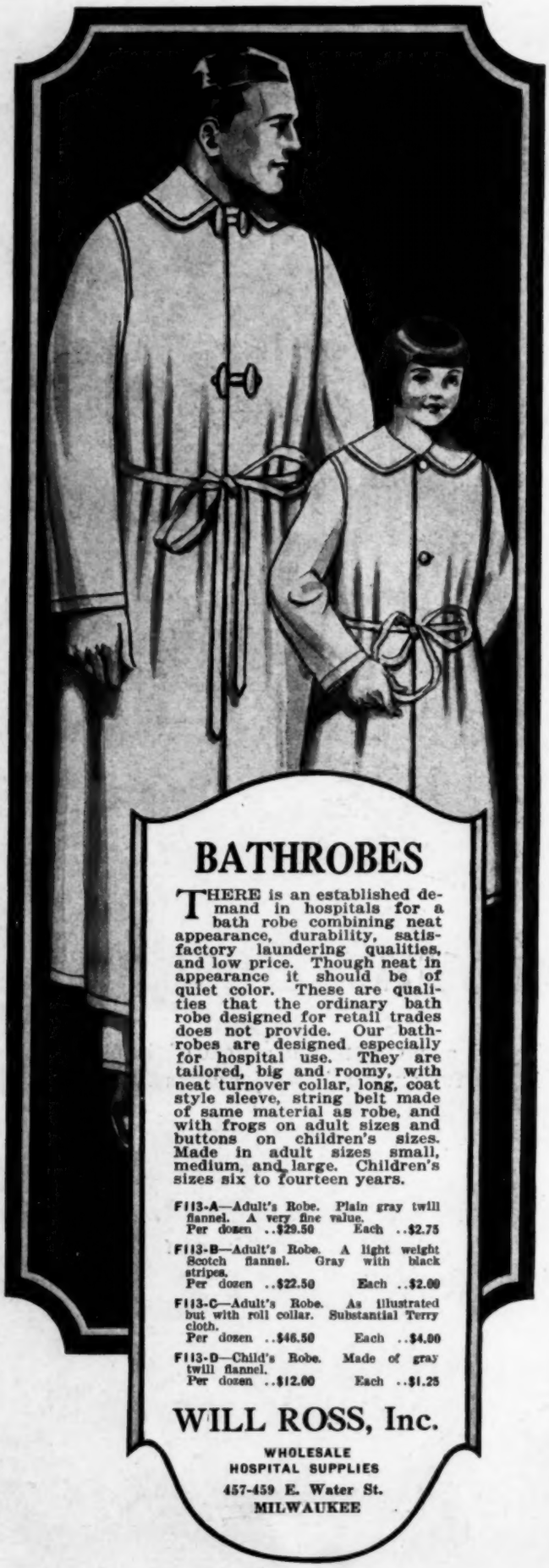
The Lipman Organization is one of the oldest in the full-automatic refrigeration field. It pioneered the way. And every Lipman Refrigerating Machine is a better machine today by virtue of that long experience.

Let us send you our Free Illustrated Folder "Hospital Refrigeration" and our New Booklet "The ABCs of Electrical Refrigeration" that tells a technical story in a clear interesting way.

General Refrigeration Company

117-193 Shirland Ave. Beloit, Wisconsin

For complete index of advertisements refer to the Classified Directory



BATHROBES

THERE is an established demand in hospitals for a bath robe combining neat appearance, durability, satisfactory laundering qualities, and low price. Though neat in appearance it should be of quiet color. These are qualities that the ordinary bath robe designed for retail trades does not provide. Our bathrobes are designed especially for hospital use. They are tailored, big and roomy, with neat turnover collar, long, coat style sleeve, string belt made of same material as robe, and with frogs on adult sizes and buttons on children's sizes. Made in adult sizes small, medium, and large. Children's sizes six to fourteen years.

F113-A—Adult's Robe. Plain gray twill flannel. A very fine value.
Per dozen ..$29.50 Each ..$2.75

F113-B—Adult's Robe. A light weight Scotch flannel. Gray with black stripes.
Per dozen ..$22.50 Each ..$2.00

F113-C—Adult's Robe. As illustrated but with roll collar. Substantial Terry cloth.
Per dozen ..$46.50 Each ..$4.00

F113-D—Child's Robe. Made of gray twill flannel.
Per dozen ..$12.00 Each ..$1.25

WILL ROSS, Inc.

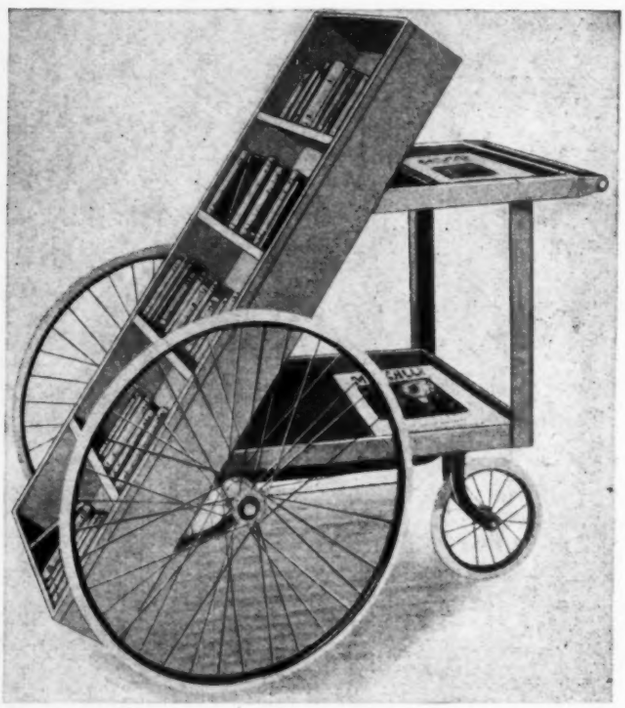
WHOLESALE
HOSPITAL SUPPLIES
457-459 E. Water St.
MILWAUKEE

thus be turned on and off, permitting the flow of water through the aspirator in a downward direction discharging the contents into the floor drain.

The water in its downward course produces suction in the ejector tube attached to the side of the aspirator, so that the discharges from the cavity are immediately disposed of. When not in use the wall valve is closed, the aspirator is uncoupled and the floor opening is covered by a heavy cast-brass cover. When the drain is covered it is not an obstruction on the floor and may be located near the operating table or just outside the operating room. It can be thoroughly washed by a flow of water down the wall valve into the aspirator drain and trap.

BOOK TRUCK MADE FROM CHASSIS OF WHEEL CHAIR

In order to facilitate the carrying of books from room to room in the hospital in such a way that a patient may view all the books on the truck by merely turning the head, a superintendent conceived the idea of converting the chassis of an old wheel chair into a book truck. This book



Book truck with five-shelf rack.

truck, which is now on the market, consists of the three wheeled invalid chair chassis and a five-shelf book rack made of steel that inclines at an angle and supports a large number of books. In back of the rack are two horizontal shelves that may be used for miscellaneous papers or magazines.

The truck is equipped with rubber tires and bumpers so that it does not damage furniture or walls and is wheeled from room to room as easily and is just as noiseless as is a wheel chair. It can thus be wheeled up close to the patient's bed and, because of the angle of the rack, the patient is readily able to see all the books without having to change position or without the bother of the librarian's having to handle the books.

A similar truck designed for carrying orthopedic parts to the bed or operating table has also recently been placed on the market.

The modern hospital must use photography

Photographs are scientifically accurate case records. They are easily and correctly understood and interpreted. They save the time of staff men and thus save money. They are always available for discussion in clinics.

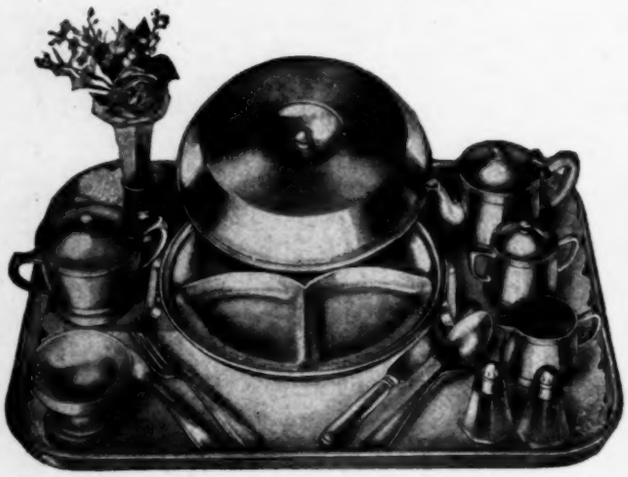
Photographs are easily and quickly made with an Eastman Clinical Camera Outfit. Motion pictures may be made with equal ease and success with the Ciné-Kodak, Model A. These two equipments supplement one another to the extent that surgical or clinical conditions can always be permanently and accurately recorded in a way intelligible to all.

Ask the Eastman Demonstrator to explain photography in hospitals

Eastman Kodak Company

Medical Division Rochester, N. Y.

THORNER'S
Silver Service



Thorner's Silver Service is made of 18% Nickel Silver with a quadruple silver plate. Wears a lifetime. Replacement through breakage is forever eliminated. It is never affected by wear or polishing.

Illustration features Thorner's Improved Three Compartment Hot Water Plate. Tea Set with reinforced bands, hard metal hinges, Silver Soldered and one-piece unleakable bottom. Covered Soup Cup with Silver Soldered handles. Sherbet Dish, Individual Bud Vase, Salt and Pepper Shakers, and Superior Grade Sectional Plate Flatware.

THORNER BROTHERS

Importers and Manufacturers of Hospital and Surgical Supplies

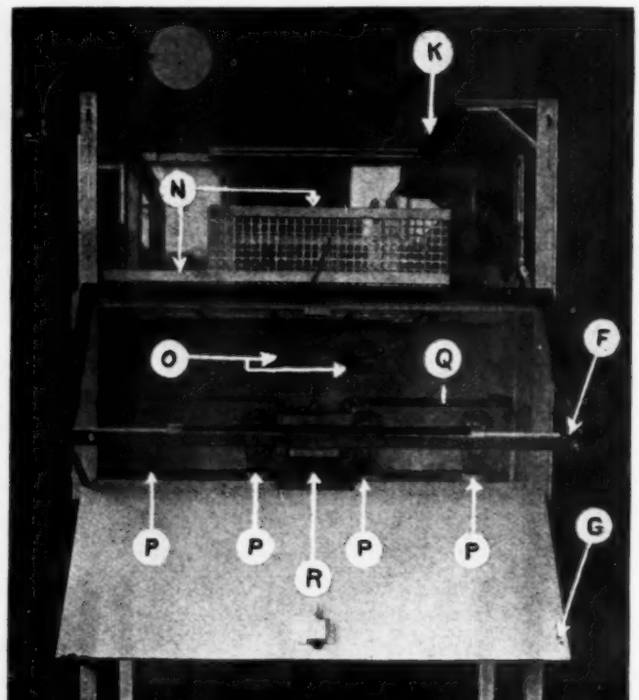
386-390 Second Avenue

NEW YORK CITY

BED PROVIDING ISOLATION UNIT FOR PREMATURE INFANTS

A bed for premature and feeble infants, embodying several features that individualize to a great extent the care of the premature baby, has been designed by Dr. J. W. Morganthaler, Brooklyn Hospital, Brooklyn, N. Y. The bed has been in use in the nursery of the hospital for the past four years during which time over 150 premature and feeble infants have been treated, with a loss of only seven babies.

The bed is a unit in itself, offering isolation from the rest of the nursery, thus obviating the necessity for conditioned rooms for the care of premature infants in the hospital. One of its chief advantages is its system of circulation by which it maintains conditioned air in the



bed chambers at a required temperature. The condition desired is maintained by keeping water in the reservoir and by adjusting the thermostat, which permits automatic control of temperature with a differential of two degrees.

The bed is constructed of metal, with plate glass and sheet rock asbestos, and is finished in white enamel, with working parts aluminum and silver. It consists of two chambers. The upper one enclosed on all sides is the crib chamber. It has a movable door of plate glass, covering the entire front of the chamber and the door is operated from two spring catches. The lower chamber has a movable door hinged at the bottom, closing the entire front of the chamber. A sliding adjustable shade is used to keep the direct light of the electric bulbs from shining directly upon the baby's head.

As the room air enters the crib it is heated by four lamps and is brought in contact with a moistening pad which is on the metal rack extending the length of the

A tempting asparagus dish *for patients with "finicky" appetites*

How to make it at surprisingly low cost

Particularly pleasing to patients who are "fussy" about their food, according to many dietitians, is this tempting "dressed up" dish of asparagus and chicken a la king. So easily made, at surprisingly low cost, it is being seen more and more on the hospital tray.

The secret of the special goodness of this dish lies in a tender, creamy-white asparagus, grown in Libby's own California beds. There it is cut the very hour the tender shoots break the soft ground. And but a few hours later it is packed in Libby's nearby kitchens with all its full, natural flavor sealed in.

And so it is with all of Libby's Foods. Wherever nature yields a perfect flavor, in the garden spots of the world, there stand the Libby kitchens ready to pack and seal the food on the very day it reaches its full, natural ripeness in the fields. Now over 50 separate kitchens pack over 100 Libby Foods, each where it grows at its best.

Those who are responsible for the choice of hospital foods will find the Libby flavors just the thing for "finicky" appetites. A trial order will convince you. Consult the partial list below.

Libby, McNeill & Libby
Dept. N-2, Welfare Bldg.
Chicago

Chicken a la king on Libby's Asparagus Tips, an unusually tasty dish for the supper tray. As no toast is used, it eliminates the trouble of the toast being soaked before it reaches the patient

Asparagus suggestions for special diets

For the diabetic who is tired of his usual 5% vegetable dish and egg: Beat the egg and add 30 grams of cream. Salt. Pour over 100 grams of Libby's Asparagus Tips in the casserole. Steam until egg is cooked, and serve.

For the anti-constipation diet: Serve five of Libby's Asparagus Tips on lettuce with mayonnaise dressing.

For the meat-free tray: Line the casserole with Libby's Asparagus Tips and pour cheese soufflé in the center.

For the obesity diet: Serve Libby's Asparagus Tips with molded tomato jelly. This is also a delicious salad for your general trays, especially when mayonnaise is served on top with chopped parsley.

Libby's 100 Foods

These Libby Foods are packed in special sizes for institutions

Hawaiian Pineapple	Pork and Beans
California Asparagus	Olives
California Fruits	Pickles
Spinach	Mustard
Kraut	Bouillon Cubes
Jams	Beef Extract
Jellies	Chili Sauce
Santa Clara Prunes in Syrup	Catchup
Blackberries	Salmon
Loganberries	Evaporated Milk
Red Raspberries	Mince Meat
Tomato Purée	Boneless Chicken

EATON
ALL-WOOL
BLANKETS

—withstand hard wear and constant use

THE Eaton is essentially a hospital blanket manufactured upon definite specifications, the direct result of a long series of scientific tests under actual hospital conditions. EATON BLANKETS are standard equipment in hundreds of hospitals thruout the country. The mills where EATON BLANKETS are made have been operated continuously for 90 years.

EATON BLANKETS are made in mills out away from the crowded city where pure air circulating thru every department makes blankets more wholesome, more sanitary and more desirable for hospital use.

Any superintendent or purchasing agent for any hospital where EATON BLANKETS are not already in use is at liberty to send for samples of any style.

This trial order will be filled at our regular quantity price and may be returned for full credit.

Try an EATON BLANKET and be convinced.

STYLES

1001 Brown Heather	301 Blue
2001 Blue Heather	302 Rose
	303 Tan
3001 Natural Gray	304 Lavender

Ask for information regarding materials for Occupational Therapy

HORNER BROTHERS WOOLEN MILLS

Founded 1836

EATON RAPIDS MICHIGAN

chamber. Circulation is upward around the baby's head. The humidity of the air in the chamber varies from 50 to 65 per cent, depending upon the temperature of the bed and the humidity of the air outside. The advantage of protecting the baby during the airing of the room is noteworthy, when it is considered that after a half hour of airing, causing a drop of 18 degrees in the room temperature, a drop of only three degrees occurs in the crib.

The adjustability of the openings on the crib chamber permits of easy access to the baby for feeding, cleansing and treating, without the removal of the child. Through the temperature control the baby is thus acclimated to room conditions when the time draws near to the close of the premature stage.

AMOUNT OF LAUNDRY EQUIPMENT IS INDIVIDUAL PROBLEM

According to a recent statement the amount and type of equipment required in hospital laundries is a matter of individual opinion and preference, and is affected in no small degree by the type of hospital under consideration.

The amount of laundry floor space needed is variously estimated at from ten to fourteen square feet, and the cost of equipment, when installed, at from $100 to $130 for each hospital bed. Again, local conditions, such as the type and geographical location of the hospital, as well as the architecture of the laundry, must be considered as possibly altering these ratios.

For example, in one well known hospital of 112 beds, in the Middle West, the following equipment was recently installed:

1 42″x54″ washer
1 28″x23″ solid-head washer
1 30″ extractor
1 3-compartment stationary tub
1 30″x42″ drying tumbler
1 4-roll 100″ ironer
2 presses
3 ironing boards.

This equipment, with six employees, was able to launder 1,996 pieces of hospital linen a day, at an average total cost of $19.50. Until the installation of this equipment this hospital was forced to send its linen to a commercial plant, under which system the cost was $26 to $33 a day.

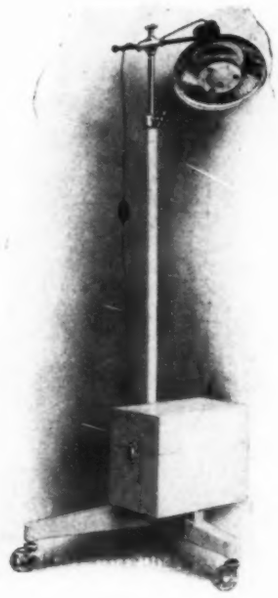
In another institution of fifty-five beds the following equipment is in use:

1 36″x54″ galvanized case, brass cylinder, solid head washer, belted, motor-driven
1 26″ vertical, motor-driven extractor
1 100″ two-roll return, apron, flat-work ironer
2 compound universal presses
2 ironing boards.

Here four women, who work eight hours a day, are able to wash 1,223 pieces, or approximately 450 pounds of linen and wearing apparel daily. The cost of operating this plant is $530 per month.

CLEANING REED FURNITURE

A well-known furniture manufacturer suggested the following method for cleaning reed furniture: Mix a few ounces of chlorid of lime in a pail of cold water. Then scrub the furniture thoroughly with a brush dipped in the solution. The furniture should then be placed in the sun until dry, care being taken to remove it promptly as the sun turns reed yellow if it is permitted to remain in it too long.



Portable Scialytic Emergency Operating Light (Type H)

When the Lights Go Out—

what happens in your operating room? Are you prepared for this critical moment? The

SCIALYTIC
Emergency Light

provides immediate illumination independent from the lighting circuit and includes all the exclusive Scialytic features—reducing annoying head shadows and eliminating heat and glare.

The comparatively low cost of the Scialytic Emergency Operating Light makes its installation an imperative need in every operating room. Write for descriptive circular No. H-5.

B.B.T. CORPORATION OF AMERICA

ATLANTIC BUILDING PHILADELPHIA PENNA.

Actual Size

Price $25.00

Tycos Sphygmomanometer

The Tycos self-verifying Sphygmomanometer is built like a fine watch—the utmost care being taken to insure its dependable action under all circumstances. The needle indicates the actual pressure when the dial is in any position, and may be relied upon absolutely for the fine determination of systolic and diastolic pressures. The whole outfit including carrying case and sterilizable sleeve can be conveniently carried in the pocket. See them at your surgical dealer.

For Your Library

Humidity and the Physician
Status of the Sphygmomanometer
Blood Pressure and Surgery
Blood Pressure
Bibliography on Blood Pressure and History of Sphygmomanometer

These are free, send for them

Taylor Instrument Companies

ROCHESTER, N. Y., U. S. A.

CANADIAN PLANT
TYCOS BUILDING
TORONTO

MANUFACTURING DISTRIBUTORS
IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON

Holtzer-Cabot Signaling Systems Apparatus

Corridor Annunciator

Push Button Selector Keyboard

Control Unit

Private Room Call and Reset Station

Ward Call and Reset Station

Flush Lamp Annunciator

Dome type Lamp Station

Commanding

Consideration for their simple construction — exclusive features, and dependable service, Holtzer-Cabot Signaling Systems are specified by leading architects and engineers.

Each of the following systems

Nurse's Call
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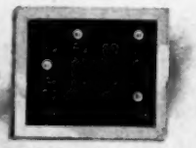
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Book Reviews and Current Hospital Literature

CLINICAL APPLICATION OF SUNLIGHT AND ARTIFICIAL RADIATION

By EDGAR MAYER, M.D.*

The publication of this work is exceedingly timely, and will be welcomed by the ever-widening group of medical workers interested in phototherapy. Timely, particularly because of the need for a clear presentation of the subject when so much loose talk and, it is to be feared, loose practice prevails regarding it.

The author is well known in the tuberculosis field as one of the group of workers at Saranac Lake, N. Y., who, under the inspiring leadership of Dr. Edward R. Baldwin (to whom the book is dedicated) have contributed much to our knowledge of the nature of tuberculosis and methods for its treatment.

While, however, the author has paid special attention to the use of light in the treatment of tuberculosis, he has also given a thorough and scientific presentation of the relation of light to disease in general, and of the physiological and experimental aspects of the clinical application of sunlight and artificial radiation.

Chapter 1, "Introductory and Historical," is remarkably interesting and provides a good foundation for intensive study of the rest of the volume. In this chapter, as indeed throughout the volume, the reviewer has been impressed with the evidence of the author's analytical method of approach to the manifold problems involved. While recognizing that the encouraging results that have been received definitely warrant further and exhaustive study of the therapeutic potency of light, he is careful to point out that "many of the claims for its use must be based upon empirical evidence, chiefly because the fundamental principles of the biophysics and physiology of radiation remain unsolved. Hence, if practicable deductions are to be made, it is evident that not infrequently these must be made without complete scientific support."

Throughout, however, the author has striven to support the "practicable deductions" by numerous references that are indicative of his wide and comprehensive study of the subject.

After dealing with the nature of light radiation, the author sets forth some fundamental considerations regarding the action of light on animal and plant life, and follows it by a comprehensive practical account of recent experimental work in the action of light on growth and nutrition. Nutrition workers and child specialists should find this chapter (IV) of absorbing interest.

In dealing with the important matter of the effect of radiant energy upon bacteria and biological products, the author has assembled a wealth of references of great value alike to the clinician and the laboratory worker. Sections on the cause of the lethal action of light on bac-

*The Williams & Wilkins Company, Baltimore, Md.

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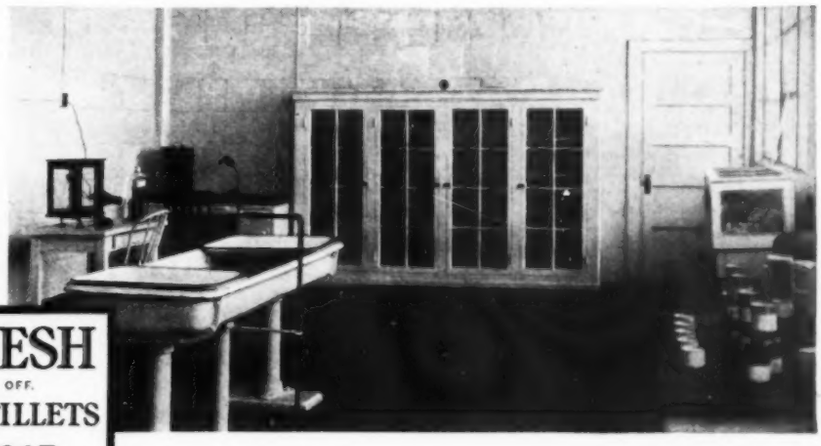
A view of the spotless laboratories of General Seafoods at Gloucester, where Seafresh fish are prepared for you . . . . .



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Packed in sanitary cartons, sealed, insulated—Seafresh fish are shipped to you with freshness unimpaired by travel. You handle Seafresh as you would any fresh-caught fish, cook it at once—and save no end of waste and bother—which in a well-run hospital means saving money and time.

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Send now for samples to test, and recipes. Hospitals are already keenly interested users of Seafresh. Dietitians are feeding their patients better fish, and auditors are delighted with the saving.

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GENTLEMEN:
Please send me free samples of Frosted Fillets and Frosted Sealoaf.

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Located in the hills of New Jersey, in the heart of this great residential community, we find the Mountain Side Hospital, and, of course, Hall beds as a part of its modern, beautiful and efficient equipment. The world's roster of satisfied Hall users is always growing. Call on us when considering new bedsteads of any type or quantity.

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Established 1828

Here are a few of the New Jersey hospitals using Hall beds:

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Hackensack—Hackensack Hospital
Jersey City—Jersey City Hospital
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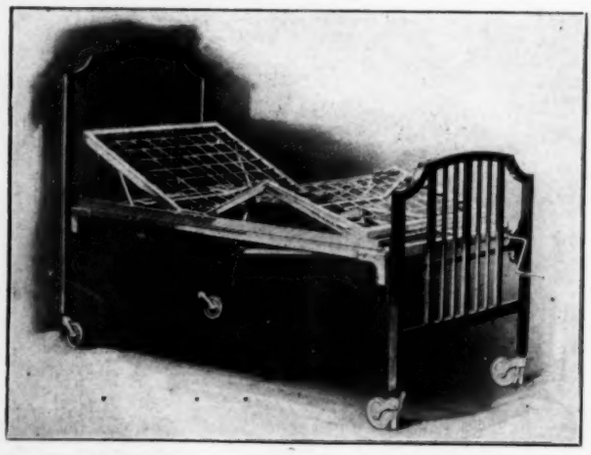
Newark—Babies' Hospital
Newark—Homeopathic Hospital
Newark—St. Barnabas Hospital
New Brunswick—John Wells Memorial Hospital
New Brunswick—Middlesex General Hospital
New Brunswick—St. Peter's Hospital
Orange—Orange Memorial Hospital
Paterson—Barnert Memorial Hospital
Princeton—Princeton Hospital
Princeton—Princeton University Infirmary
Somerville—Somerset Hospital
Summit—Overlook Hospital



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teria, and the intrinsic and extrinsic factors involved, are reinforced by well documented accounts and tables of experimental studies by leading scientists in this country and abroad. The physiological action of light on the various organs of the body is also dealt with in considerable detail in a similarly useful manner.

Valuable information regarding the influence of light on various disease conditions is contained in the chapter on the sensitization of tissues to light.

With this background of theory and the results of experimental research, the author then proceeds in a series of chapters to set forth practical considerations that will most certainly be eagerly welcomed by the large number of physicians and surgeons interested in this comparatively new field of therapeutics. Tuberculosis specialists in particular, who have been badly in need of guidance in the methods of application and dosage of heliotherapy, and in the selection of apparatus for artificial radiation, will find in this volume a source of information that has not hitherto been available without wide study of authorities and opportunities for clinical experimentation and research.

The comparative studies given of the numerous lamps that are now available as the source of ultraviolet rays are of great practical value. These studies include lamps of various kinds, such as the carbon, tungsten, mercury vapor arc lamps, and other special types, and "an outline of the relative merits of different forms of radiation in clinical entities of tuberculosis." The author also refers to the types of special glass that permit of the passage of the ultraviolet rays of the sun, now on the market.

Roentgenotherapy is dealt with in a special section, but the author's opinion is that "We must conclude that the value of x-ray therapy for pulmonary tuberculosis is as yet problematical, and its application should be controlled with great care."

The volume is rounded out and completed by an appendix, which includes a study of the influence of light on biochemical reactions; an addendum of recent statements; a comprehensive bibliography; an author index; and a general index. In all, this is an exceedingly useful work that should meet a real present need.—*T. B. Kidner.*

LEADERSHIP

By WILLIAM COLBY RUCKER, Surgeon, U. S. Public Health Service, U. S. Marine Hospital, No. 14, New Orleans, La.*

Although it has been written primarily for the medical officers of the Public Health Service, Dr. Rucker's new book, "Leadership, a Manual on Conduct and Administration," should be heartily welcomed by hospital executives.

Coming as the result of twenty-five years of wide experience, the book is a source of inspiration and delightful reading for hospital superintendents and executives. With Dr. Rucker's usual facility of expression and his broad human understanding, he sets forth the attributes of character and of successful leadership in a most interesting style that has a universal appeal.

The significance of Dr. Rucker's book as a pioneer in the field is aptly expressed by Surgeon General Cumming in the introduction to the book: "It is the first and only book of its kind which has been written for the Public Health Service and the hospital and sanitary field, and I consider it the duty of every worker in these lines of endeavor to own a copy and to read it carefully."

*The Macmillan Company, New York.

Neither drafts nor dust can force their way through the *cloth-to-metal contact*

Athey *Cloth-Lined*

Metal Weatherstrip

FULL SIZE
Detail of equipment for wood sash. The channel is inserted in the edge of the sash and the rail nailed to the jamb.
The same principle of cloth-to-metal contact is used for both hollow metal and drawn steel sash.

Some of America's finest buildings have proved that the fuel saving effected by the installation of Athey Cloth-Lined Metal Weatherstrip *pays the entire cost of installation in a year or two.*

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Modern medicine stresses prevention

Kellogg's ALL-BRAN not only relieves constipation promptly and naturally—but prevents it. Eaten regularly, it promotes natural, healthful elimination.

Only a 100% bran product could perform this double service that ALL-BRAN renders. Doctors know they can rely upon it to accomplish the results anticipated because it is all bran. Results no part-bran product can hope to equal!

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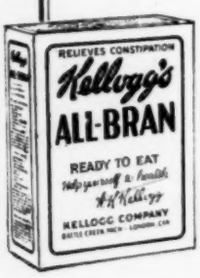
Made by Kellogg in Battle Creek. Served everywhere. Sold by all grocers.

What U. S. P. is to drugs, ALL-BRAN is to bran foods.

Send to the Kellogg Company, Battle Creek, Mich., for recipes and health pamphlets.



Kellogg's

the original ALL-BRAN

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NEWS OF THE HOSPITALS

Alabama

The Montgomery Memorial Hospital, Montgomery, is planning the erection of a nurses' home to cost $60,000.

Arizona

Plans are being completed for the new three-story unit of St. Joseph's Hospital, Phoenix. The building will add thirty-three rooms to the hospital and will cost $100,000.

California

Work is to start this month on the new $8,000,000 general hospital for Los Angeles, which will adjoin the present general hospital.

A new emergency hospital is being erected in Los Angeles to be known as the Pasadena Avenue Branch of the Receiving Hospital. This is the first hospital to be erected under the recent $500,000 bond issue.

Colorado

William E. Fischer and Arthur A. Fischer, Denver, are the architects of the B'Nai B'Rith Infirmary of the National Jewish Hospital for Consumptives, Denver, recently completed.

Delaware

Contract has been let for the construction of a $100,000 maternity ward unit addition to the Homeopathic Hospital, Wilmington. It will be a two-story building consisting of wards and private rooms.

Florida

The city of Acola and Marion County are sharing the expenses of constructing a new 90-bed Monroe Memorial Hospital to cost $100,000.

Georgia

A proposal to contribute $100,000 for a part-pay ward for Grady Hospital, Atlanta, has been made by Jacob Elsas, on the condition that the city and county officials bring the total up to $400,000.

Hopewell, the new tuberculosis hospital at Smithsonia, has recently been opened. The hospital will provide quarters for eighteen white patients and twelve negroes.

Illinois

An expenditure of $2,300,000 has been asked for a 450-bed hospital and utility buildings for the Veterans' Hospital of the U. S. Naval Training Station, Great Lakes, Ill.

A campaign for $500,000 is being conducted to erect a new building to replace the Women's and Children's Hospital, Chicago. It is planned to erect a 100-bed hospital, the site for which has not yet been selected.

Plans are being formed, under the auspices of the Physicians' and Surgeons' Institution of Chicago, for a

Our Campaign for $1,000,000 for

The Children's Hospital at Buffalo

produced

$1,211,600.00

and Closed on January 29—Two Days Ahead of Time

Only nine weeks before this our campaign for $750,000 for The Millard Fillmore Hospital at Buffalo also closed two days ahead of schedule with $815,000.00 subscribed.

THERE is no record of money-raising campaigns for hospitals to equal the above—two immense undertakings (which everybody interested enough to express an opinion, said couldn't be done), same city, same season, same directing firm, same director—but different hospitals, different appeals, different volunteer organizations of solicitors.

The slightest slip—any mistake in plan, policy or execution—would have resulted in failure, and, doubtless, in the loss of hundreds of thousands of dollars.

Of course you wouldn't advise any person to use an inexperienced, or second rate, or experimenting surgeon on a major case.

Yet there are some hospital boards that need to be reminded that experience in money-raising is as necessary as in surgery—and harder to find.

WARD, WELLS, DRESHMAN AND GATES

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Originators of the Intensive Method of Fund-Raising

HEDRICK, MARTS & LUNDY, INC.

CAMPAIGN DIRECTION SERVICE THAT HAS PRODUCED $203,000,000

THE Members of this corporation, and its associated organizations, have directed campaigns totaling $205,082,449 for philanthropic institutions. They offer to your Hospital Board a service in campaign direction made expert through years of experience in serving organizations devoted to the promotion of the public good.

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Members of the Joint Board of Campaign Counsel and Planning

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Prepared Casein Dietetic

FLOUR

Accepted by The Council, A. M. A.

For Strictly Starch-free Muffins

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Ask us for address of nearest Lister Depot or order direct.

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405 Lexington Ave. New York City

twenty-three story hospital to be built at La Salle and Maple Streets, to be primarily an institute for diagnosis. According to present plans, the institution will not treat patients but will house them until diagnosis is made and they will then be sent to their physicians for treatment. The building is to have 800 rooms, a third of which will be used for hotel purposes for patients waiting for diagnosis.

Kansas

Two new cottages and a laundry are included in the proposed budget of $495,000 for the Larned State Hospital, Larned. The cottages are to cost $120,000 and the laundry $70,000.

Kentucky

The Baptist General Hospital, Ashland, is launching a drive for $300,000 to enlarge the hospital and purchase additional equipment. Ivan Pelter, manager, Church and Hospital Financial Council of the Protestant Hospital Association, Ludington, Mich., will have charge of the campaign.

Louisiana

The John Dibert Memorial Tuberculosis Hospital, New Orleans, was opened February 10.

Maryland

New quarters for the gynecologic department of Johns Hopkins Hospital, Baltimore, were recently formally opened on the sixth floor of the woman's clinic. The suite consists of five distinct units in which operations can be done simultaneously in the presence of students.

Massachusetts

A new wing is being constructed for the Norfolk State Hospital, Norfolk.

Michigan

Two appropriations totaling $1,675,000 covering the cost of construction of an addition and a tower to the Receiving Hospital, Detroit, have been presented by the Department of Public Welfare. The addition to the Receiving Hospital is planned to house the laboratories and out-patient section, and the proposed tower, which will house the nurses, is to be erected on top of the recent addition.

The new Thomas Henry Simpson Memorial for Medical Research of the University of Michigan Hospital, Ann Arbor, was recently dedicated. The building was the gift of the widow of the late Thomas Henry Simpson and was erected at a cost of $225,000 and has an endowment of $250,000.

Minnesota

The Minneapolis General Hospital, Minneapolis, has been compelled to refuse admittance to adult patients because of lack of room.

The Willmar Hospital, Willmar, has issued a pamphlet announcing the occupancy of the new building which brings the capacity of the hospital up to fifty beds.

Mississippi

The Charity Hospital, Jackson, has reopened after being closed for two months. The new nurses' home of the hospital has recently been completed.

New Jersey

The Alexian Brothers' Hospital, Elizabeth, is planning the erection of a wing to cost $350,000 and contain 100 beds.

On One Duty Day and Night

HOSPITAL attendants' attention is too urgently and vitally devoted to other important duties to correctly attend to the temperature and humidity requirements of the various rooms. The result is that neglect naturally exists, and unrealized incorrect conditions continue, especially over-heating—so prevalent in hospitals. The Johnson System Of Temperature Control, through the individual Johnson thermostats on the wall of each room, every corridor, etc., automatically *holds* the temperature *continually* and *perfectly* at the point necessary—insuring unchangeable, constant accuracy: relieving the attendants of that duty and responsibility; relieving the building of becoming over-heated, and thus, too, reducing the fuel consumption 15 to 35 per cent annually.

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Johnson Dual or Two Temperature Thermostat: one temperature for occupied rooms, another temperature for unoccupied rooms—day or night. Write for details.

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HOSPITAL FINANCING

Seasons 1927

FOR years we have been successful in raising large sums of money for a great number of institutions and organizations restricted to very definite classifications of the highest merit.

Occasionally our service has been made available to a few hospitals upon the urgent solicitation of former clients. Our wider experience, together with the employment of those same highly ethical policies and exclusively designed methods that gained pre-eminence in other fields, have invariably registered an even higher degree of success in raising money for the hospital.

We now announce that we are more ably prepared to extend this highly trained service for a limited number of hospital campaigns for the Spring and Fall seasons of 1927.

Our booklet, "Institutional Financing," will be mailed upon request.

The Herbert B. Ehler Company
Twelve East Forty-first Street
New York

A boon to both nurse and patient!

No jangling of nerves caused by constant straightening of wrinkled rubber sheets.

SIMPLY ADJUST A

NORINKLE RUBBER SHEET

to the bed, and you have eliminated all your rubber sheet troubles.

Make your patients comfortable.

HENRY L. KAUFMANN & CO.
301 Congress St. Boston, Mass.

New Jersey

The new $280,000 West Hudson Hospital, Kearny, has been opened.

Charles F. Neergaard, New York, has been appointed hospital consultant to the Welfare Federation of Newark, which is now making plans for a hospital center for the city and to erect several new hospital buildings to replace the old ones.

New York

A five million dollar campaign for an endowment for a new hospital to be known as the Gotham, is being conducted under the New York Women's Medical Association. It is planned to erect the new hospital in the vicinity of First Avenue and Fifty-ninth Street. It will contain 200 beds and will receive all types of patients except contagious cases. As it will be the first fully endowed general hospital in New York a special provision will be made for persons of moderate means from whom at least 150 beds will be set aside.

Under the will of the late Mrs. Mary Clark, the Woman's Hospital in the State of New York, New York, will receive $300,000 direct; also a contingent bequest of $1,275,000 from the same source.

The following hospitals have received bequests by the will of the late Alexander Herman: Mount Sinai and Montefiore hospitals, each $100,000; Mount Sinai Hospital School of Nursing $5,000; Beth Israel Hospital, $25,000 and Lebanon Hospital, $5,000.

The Fifth Avenue Hospital, New York, is planning the erection of a new nurses' home and a structure for the out-patient department. It is planned to convert the present nurses' home into patients' quarters, so that the new buildings will increase the capacity of the hospital from 275 to 420 beds.

The Binghamton State Hospital, Binghamton, is planning the erection of a $250,000 storage warehouse and a nurses' home, and physicians' quarters costing $125,000.

The new Sydenham Hospital, New York, has been opened and is now receiving patients. It has a capacity of 156 beds, eighty-six of which are ward beds, forty-four semi-private, and twenty-six in private rooms.

A fully equipped pathological laboratory has been donated to the South Shore Hospital, Staten Island, by Mrs. Willis F. Meschenmoeser, of New Dorp, in memory of her husband.

The new St. Cecilia's Maternity Hospital, Brooklyn, was recently dedicated. The hospital is a three-story, sixty-bed hospital under the direction of the Dominican Sisters.

North Carolina

The directors of the Edgecombe Hospital, Tarboro, have offered the hospital to the counties of Edgecombe, Halifax and Martin to be held under a joint deed of trust to be used for the counties. If accepted the hospital will be eligible to share in the benefits of the Duke Foundation.

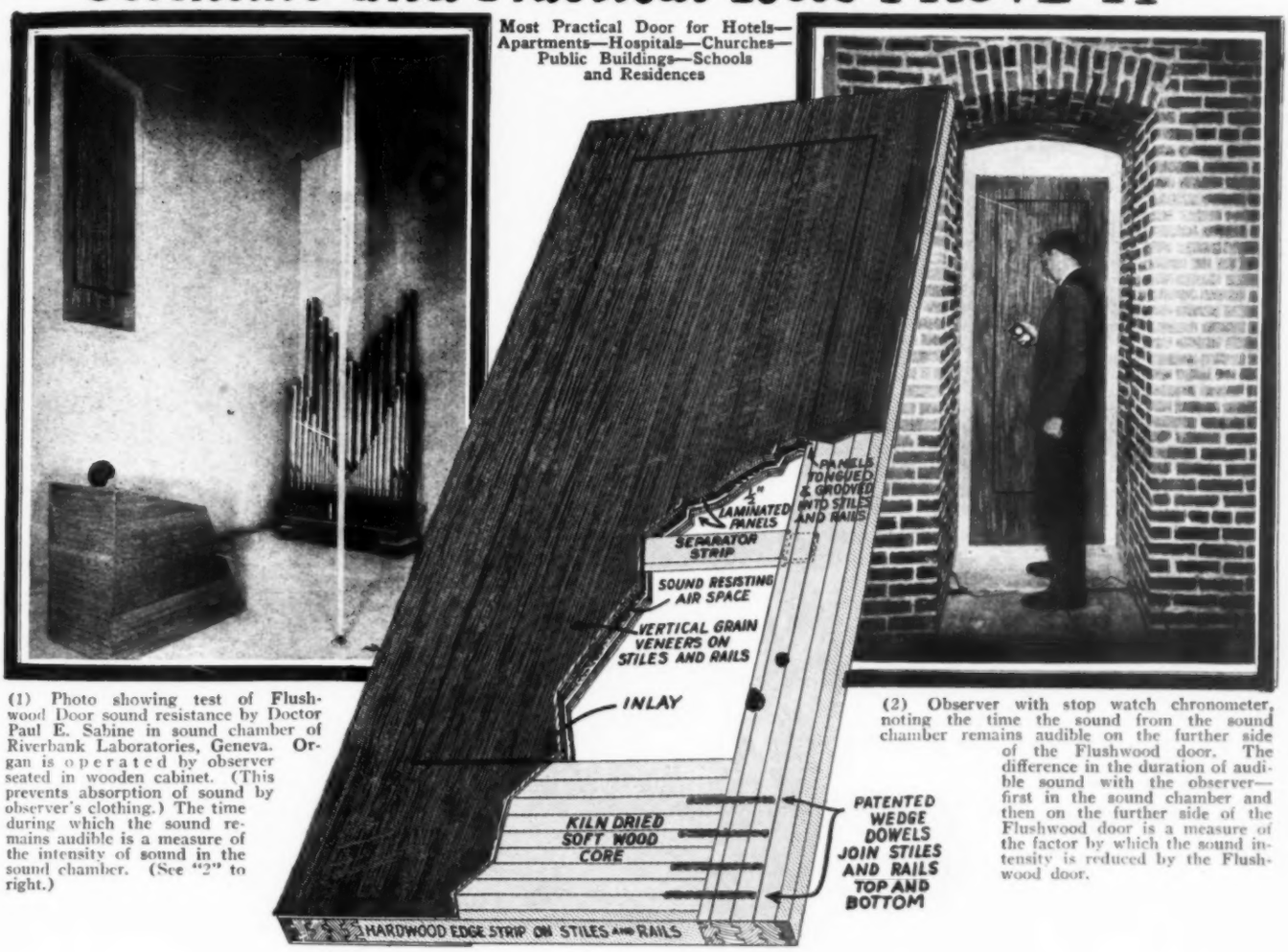
Oxford is planning a hospital for colored people to be known as the Susie Cheatham Memorial Hospital, in honor of the daughter of Dr. H. P. Cheatham, superintendent of the Oxford Colored Orphan Asylum.

North Dakota

The new nurses' home of St. Alexis Hospital, Bismark, has been opened. The building contains four stories and is equipped to be used partly as a hospital, providing thirty-five beds for that use, and partly as a nurses' home.

Sound Resistant! Reduces Sound Transmission To A Minimum

Scientific and Practical Tests PROVE IT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1" LAMINATED PANELS
SEPARATOR STRIP
SOUND RESISTING AIR SPACE
VERTICAL GRAIN VENEERS ON STILES AND RAILS
INLAY
PATENTED WEDGE DOWELS JOIN STILES AND RAILS TOP AND BOTTOM
KILN DRIED SOFT WOOD CORE
HARDWOOD EDGE STRIP ON STILES AND RAILS

(1) Photo showing test of Flushwood Door sound resistance by Doctor Paul E. Sabine in sound chamber of Riverbank Laboratories, Geneva. Organ is operated by observer seated in wooden cabinet. (This prevents absorption of sound by observer's clothing.) The time during which the sound remains audible is a measure of the intensity of sound in the sound chamber. (See "2" to right.)

(2) Observer with stop watch chronometer, noting the time the sound from the sound chamber remains audible on the further side of the Flushwood door. The difference in the duration of audible sound with the observer—first in the sound chamber and then on the further side of the Flushwood door is a measure of the factor by which the sound intensity is reduced by the Flushwood door.

FLUSHWOOD

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FLUSHWOOD is one of the most efficient sound resisting doors made. This is fast becoming a generally known fact!

Constructional engineers, builders and architects have proved it by practical usage, while the eminent authority on acoustics, Dr. Paul E. Sabine proved it by the scientific laboratory tests described and illustrated above.

This remarkable door is a perfect combination of the best features of the ordinary flush door, and the patented, hollow-panel, sound resistant construction, which is used exclusively in Flushwood—affording one of the greatest door values in history.

FLUSHWOOD FEATURES
(Patented)

Read the following comparative information. Study the cross-sectional view above. You will easily be convinced of the exclusive merits of this wonderful door.

(1) **Flushwood is more sound resistant.** The dead air space between panels provides a greater reduction in sound transmission than in the ordinary flush door.

(2) **Flushwood is made in different combinations of** woods and can be furnished with Stiles and Rails of plain wood and panels of figured woods giving a beautiful contrasting effect. Any desired arrangement of glass openings can be provided.

(3) A beautiful mar is furnished in Flushwood in any kind of wood.

(4) **Flushwood weighs only two-thirds as much as a regular flush door,** making possible a substantial saving in freight, handling, fitting and hanging.

(5) **Flushwood will not warp or twist.** Moisture content is at a minimum. All wood used is kiln-dried. A Patented Wedge Dowel is used thruout, binding the door into a solid rigid unit.

(6) **Finally,** the cost of Flushwood is low. Inlaid two sides it can be purchased for less than an ordinary flush door without inlay.

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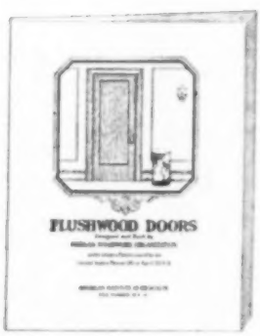

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"Silent" Equipment

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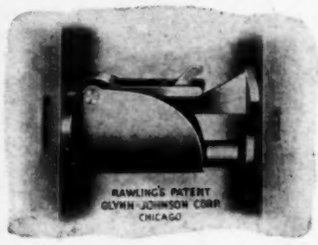
For installation on Entrance Doors opening out.
"Up over the heads of the crowd."

Rawling's Automatic Door Holder and Bumper
For installation on doors opening back to partitions or walls.
Ideal Equipment for Service Doors.



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Fulcrum or Leverage principle. Simple—Noiseless in operation. Splendid equipment on doors of every description. Especially Doors operating with door closers, or checks.

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You too will find the high purity of our gases and the easy working and non-leaking valves much to your advantage.

Trade Mark Reg.

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A synonym for the best there is in

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PERCENTAGE MIXTURES OF CARBON DIOXID AND OXYGEN
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Sold by all real dealers; or write us direct stating average monthly requirements and size of cylinders used.

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1852 So. Ogden Ave. CHICAGO
6th and Baymiller Sts. CINCINNATI
455 Canfield Ave., E. DETROIT, MICH.
810 Cromwell Ave. ST. PAUL, MINN.

Ohio

The Babies' and Children's Hospital, Cleveland, has received a gift of $5,000 from the late Dr. Hamilton F. Bigger, a physician of Cleveland.

The City Hospital, Lima, is planning a new $600,000 hospital.

Oregon

The State of Oregon has voted the construction of an Eastern Oregon Tuberculosis Hospital, and communities are conducting campaigns to secure the location of the proposed institution.

Pennsylvania

The Northeastern Hospital, Philadelphia, announces the following gifts: $10,000 from Mrs. I. H. West and William L. Holmes for the endowment of a room in memory of their mother, Mrs. Nancy Holmes; $15,000 from Mr. and Mrs. Paul E. Sutro, president of the hospital and his wife, for the erection of a new ward for children, and $5,000 from Mrs. Georgella Simonin and Eugene Simonin in memory of Isaac M. Simonin, former vice-president of the hospital.

A new group of buildings for the Abington Memorial Hospital, Montgomery County, which is looking forward to an expansion to accommodate 250 patients and an ultimate expansion to 500 beds. Messrs. Tilden, Register and Pepper are the architects, and Dr. S. S. Goldwater, New York, consultant.

Rhode Island

The new building of the Lying-in Hospital, Providence, has been opened.

Tennessee

A three-story 40-bed hospital for the care of tuberculous patients has been opened at Pine Breeze.

Texas

The 125-bed Dallas Sanitarium, Dallas, will open May 1, according to the recent announcement of Dr. J. H. Groseclose, superintendent.

Virginia

The Roanoke Hospital, Roanoke, has announced an anonymous gift of funds for the immediate erection of a three-story home for nurses to be built adjoining the old nurses' home.

Washington

Hugh C. Wallace, formerly U. S. ambassador to France, has provided for an endowment of $10,000 for the Tacoma General Hospital, Tacoma, in memory of his son.

St. Joseph's Hospital, Bellingham, is planning a new sixty-five bed addition to the hospital to be known as the Dr. H. A. Compton Pavilion, in honor of the pioneer physician of the city. The addition is expected to be ready for occupancy by September 1.

West Virginia

The Ohio Valley Hospital, Wheeling, is planning the erection of a $200,000 nurses' home which is expected to be completed by January 1928.

Canada

Montreal General Hospital, Montreal, has received a bequest of $200,000 from the will of the late Colonel George R. Hooper, Montreal.

The Provincial Government of Quebec has made a grant of $100,000 to the Women's General Hospital, Montreal.